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Liability & Fear

CHRISTOPHER P. GUZELIAN*

Fear of physical harm or death has been compensable for a century. Fear, unlike other injuries, is subjective, difficult to quantify, and could lead to limitless liability. Courts seek to balance the amount of fear liability (if there should be any at all) against a perceived need to address and deter fear-related harms. Judges' decisions in fear lawsuits, however, rely upon scientifically baseless guidelines. Courts place all fear liability on creators or perpetrators of risks of physical harm—physicians, environmental polluters, product manufacturers, government (including regulatory and law enforcement agencies), and so forth. This liability assignment does not reflect fear's etiology. The courts are simplistically impugning that where a person or entity has created or increased another's risk of physical harm, the victim suffers fears either contemporaneous with a harm or in anticipation of a future harm. Scientific and sociological research indicates that most fears in America's electronic age are instead predominantly results of risk information (whether correct or false) that is communicated to society by various sources (most notably the media), not simply products of being at scientifically known ("epistemic") risk(s). This article rejects current fear liability allocations. Instead, consistent with settled general principles of liability, it proposes that the media and others who negligently or

* John M. Olin Fellow in Law & Economics, Stanford Law School (guzelian@pobox.com). A litany of extraordinary individuals gave kind advice, well-reasoned criticisms, and appreciated encouragement. Invariably I will omit by accident names of some who deserve singular recognition. Without fear of the inevitable, I thank my family, Afsheen Afshar, Cary Coglianese, Mariano-Florentino Cuéllar, Marc Franklin, Joseph Grundfest, Christine Halmes, Lawrence Lessig, Eugene Mazo, Jay Neukom, Armen Panossian, Robert Rabin, Robert Sapolsky, Nathan Schachtman, Michael Victoroff, Eugene Volokh, Robert Weisberg, the Stanford Daily, and the Stanford University Statistics Department Consulting Group. All of you gave the appreciated courtesy—and some of you offered much more—of supporting or critiquing this work. Statements and, more important, errors remain mine alone. This article's use of the first person plural follows the convention of mathematicians. They believe, as do I, that publications are a collective effort—which includes participation by the reader—to come closer to truth. Use of generalized masculine pronouns follows my convention of invoking the gender of the first-author (or in this case, the sole author), and is done only to avoid linguistic gymnastics and gross grammatical error, not to offend. I gratefully acknowledge generous financial support (and the intellectual independence that it affords) by the John M. Olin Foundation at Stanford Law School. I extend my appreciation to Olin director Mitchell Polinsky and Olin administrative assistant Randy Mont-Reynaud, as well as Stanford Law School Dean Kathleen Sullivan. Last, I thank my family and R. Kent Goodrich. My family taught me how to chase dreams. Kent taught me how to stay within epsilon of them.

intentionally skew public risk perceptions must share liability for clinically serious fears of physical harm or death.

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I. INTRODUCTION

On March 10, 2003, the United States Supreme Court decided *Norfolk & Western Railway Co. v. Ayers* ("Ayers").¹ With the fanfare of affirmative action² and homosexual equal protection cases³ decided the same term, commentators and the public gave *Ayers* little notice. Yet *Ayers* reflects an urgent need for dramatic legal and social changes that will outweigh the impacts of those instant-fame cases.

Ayers seems bland enough on first inspection; the case was another of thousands of asbestos-related litigations. Former railroad employees sued their employer under the Federal Employers' Liability Act (FELA)⁴ in West Virginia state court. The plaintiffs alleged that the railroad had negligently exposed them to asbestos in their workplaces and that they had each resultantly contracted a non-cancerous lung disease, asbestosis.⁵ The plaintiffs demanded, among other things, special mental anguish damages. These were sought to compensate *fear* the plaintiffs claimed they had suffered or were currently suffering because of an undisputed increase in their risk of contracting mesothelioma, a form of lung cancer.⁶

Ayers ruled in the plaintiffs' favor on the fear claim.⁷ On its face, this outcome may not seem controversial. Such "negligent infliction of emotional distress" ("NIED") claims are well-established, stand-alone causes of actions.⁸

¹ 538 U.S. 135 (2003).

² *Gratz v. Bollinger*, 539 U.S. 244 (2003); *Grutter v. Bollinger*, 539 U.S. 306 (2003).

³ *Lawrence v. Texas*, 539 U.S. 558 (2003).

⁴ 45 U.S.C. §§ 51-60 (2003).

⁵ Asbestosis is a chronic, progressive scarring of the lungs caused by long-term exposure to asbestos particles. In exceedingly rare instances, asbestosis can be fatal. Asbestosis is evidence of being at higher risk of contracting lung cancer, but asbestosis itself is *not* a form of cancer. See U.S. DEPT. OF HEALTH AND HUMAN SERVICES, AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY, ASBESTOS TOXICITY 20 (2000). See generally VICTOR L. ROGGLI ET AL., PATHOLOGY OF ASBESTOS-ASSOCIATED DISEASES (1992).

⁶ The *Ayers* Court reported that asbestosis sufferers have a one in ten risk of dying from mesothelioma and that the defendant's expert had confirmed this risk to be "nine or ten percent." *Ayers*, 538 U.S. at 142.

⁷ The Court held: "[M]ental anguish damages resulting from the fear of developing cancer may be recovered under the FELA by a railroad worker suffering from the actionable injury asbestosis caused by work-related exposure to asbestos." *Id.* at 141.

⁸ The Supreme Court has defined NIED as

mental or emotional injury apart from the tort law concepts of pain and suffering. Although pain and suffering are technically mental harms, these terms traditionally have been used to describe sensations stemming directly from a physical injury or condition.

And although the asbestosis victims did not yet have cancer, they allegedly had fear of cancer. The Court's decision seized on these *current* fears of future cancer so that the case would conform to ancient tort dogma: there can be no recovery without present injury.

But if one digs a little deeper, questions arise whether this holding is as passable as *Ayers* tried to make it seem. The Court references tens, if not hundreds, of previous state and federal decisions, insisting its holding conforms to the spirit of those cases.⁹ One citation is to *Dempsey v. Hartley*, a Pennsylvania case.¹⁰ In *Dempsey*, a plaintiff had suffered multiple impact injuries in a motor vehicle accident, including a bruised sternum and sore breasts that resulted in "considerable . . . pain" while breathing even months after her accident. Bizarrely, she sued the defendant driver for fear of *breast cancer*. Her own expert physician testified, "he never saw anything about her injuries that should give her any reason to apprehend cancer"¹¹ Unbelievably, and despite these apparent claim-defeating concessions by her own doctor, the district court held the other vehicle driver liable for the woman's fear of breast cancer! The judge stated:

The issue here was not the possible or even probable development of cancer in this plaintiff as a result of this accident. The testimony was admitted for the purpose of showing that this plaintiff did have a very real fear of the development of cancer of the breast and that her fears in this respect were

[Instead, NIED] is mental or emotional harm (such as fright or anxiety) that is caused by the negligence of another and that is not directly brought about by a physical injury, but that may manifest itself in physical symptoms.

Consolidated Rail Corp. v. Gottshall, 512 U.S. 532, 544 (1994) (internal citations omitted).

States, naturally, have every right to define this term differently from the federal standard, but conformity with the Supreme Court's NIED definition is strong. For instance, the Restatement of Torts suggests:

(1) If the actor unintentionally causes emotional distress to another, he is subject to liability to the other for resulting illness or bodily harm if the actor (a) should have realized that his conduct involved an unreasonable risk of causing the distress, otherwise than by knowledge of the harm or peril of a third person, and (b) from facts known to him should have realized that the distress, if it were caused, might result in illness or bodily harm.

RESTATEMENT (SECOND) OF TORTS § 313 (1965). See also *id.* at § 436.

⁹ "Many courts in recent years have considered the question presented here— whether an asbestosis claimant may be compensated for fear of cancer. Of decisions that address the issue, a clear majority sustain recovery." *Ayers*, 538 U.S. at 150–51.

¹⁰ 94 F. Supp. 918 (E.D. Pa. 1951).

¹¹ *Id.* at 920 (emphasis added).

reasonable. The appellate courts in Pennsylvania have frequently held that such suffering is compensable.¹²

This result feels very, very wrong. A physical blow causing breast cancer? If the impact by the negligent driver of the other car “was not the possible or even probable development of cancer,” then how is it that the defendant in any way *causally* contributed to that woman’s *fear* of cancer? If the woman, after the accident, had become morbidly afraid of having her breasts subsequently groped by a sexual harasser at her workplace, could she recover against the driver for “causing” *that* phobia?¹³ What fears, as long as they are “reasonable”—by which the Pennsylvania court seemed to mean the woman was not a fraud—would *not* be recoverable against the driver? Fear liability using a *Dempsey* rule seems limitless.

Anderson v. Welding Testing Laboratory Inc.,¹⁴ a Louisiana Supreme Court decision likewise cited in *Ayers*, was also unsettling. The court held that a plaintiff who had suffered a one-time radiation burn on his hand for which his own expert physician conceded that the risk of cancer “was not too probable,” could recover fear of cancer damages:

While to a scientist in his ivory tower the possibility of cancerous growth may be so minimal as to be untroubling, we are not prepared to hold that the trier of fact erred in finding compensable this real possibility to this worrying workman, faced every minute of his life with a disabled and sometimes painful hand to remind him of his fear.¹⁵

Anderson, like *Dempsey*, disturbingly teeters on decreeing that it is possible for a plaintiff to recover for subsequent fear of *anything*, even harms unrelated to the challenged negligence.

We would not worry about *Dempsey* and *Anderson* if they were exceptions banished to the dustbin of bad law. But cases can not be aberrations when the Supreme Court cites them as persuasive authority.¹⁶ Although we have

¹² *Id.*

¹³ *Cf. Nelson v. Metro-North Commuter R.R.*, 235 F.3d 101, 113 (2d Cir. 2000) (denying plaintiff’s NIED claim resulting from workplace sexual harassment because plaintiff did not demonstrate there had been “more than minimal” risk of physical harm). *But see Schraum v. Riviera Cmty. Club*, 2001 Wash. App. LEXIS 246 (Wash. Ct. App. 2001) (unpublished opinion) (permitting NIED claim stemming from sexual harassment undertaken in order to compel plaintiff to resign her job).

¹⁴ 304 So. 2d 351 (La. 1974).

¹⁵ *Id.* at 353.

¹⁶ *See Ayers*, 538 U.S. at 150 n.10 (citing both *Dempsey* and *Anderson*). For that matter, there are numerous other instances—some judicial, some regulatory—in which scientifically

admittedly and unashamedly selected these cases for their outlandishness, they clearly indicate systemic judicial misconceptions about the relation between a tortfeasor who poses a *physical* risk and the *mental* distresses that may arise from that alleged “risk.”¹⁷ For two distinct reasons, discussed immediately below, law

suspect causal relationships have been permitted to reach a jury or have been established. *See, e.g.*, *Wells v. Ortho Pharmaceutical Corp.*, 788 F.2d 741 (11th Cir. 1986) (birth defects caused by spermicidal lubricant); *Roberti v. Andy's Termite & Pest Control, Inc.*, 113 Cal. App. 4th 893 (2003) (permitting toxicologists' testimony based on animal models and some physical examinations to establish that pesticide caused child's autism, despite fact that there is no known cause for autism); *United States Sugar Corp. v. Henson*, 823 So. 2d 104 (Fla. 2002) (permitting expert opinions claiming pesticide exposure caused phrenic nerve paralysis without consideration of dose, length of exposure, or agents involved); *Donaldson v. Cent. Ill. Pub. Serv. Co.*, 767 N.E.2d 314, 328 (Ill. 2002) (awarding damages to plaintiffs for neuroblastomas purportedly caused by coal tar exposure, because even though insufficient evidence existed to establish this causal relationship, “extrapolation is commonly used by scientists in certain limited instances The fact that an expert must extrapolate, and is unable to produce specific studies that show the exact cause and effect relationship to support his conclusion, affects the weight of the testimony rather than its admissibility.”); *Lemaire v. CIBA-GEIGY Corp.*, 793 So. 2d 336 (La. Ct. App. 2001) (allowing, in case with emotional distress, fear, increased cancer risk, and injury claims, expert testimony about Atrazine exposure's causal relation to plaintiff's nausea, vomiting, diarrhea, headaches, and nostril burning to stand without explanation over vigorous dissent emphasizing lack of objectively sufficient scientific evidence); *Hanna v. Aetna Ins. Co.*, 259 N.E.2d 177 (Ohio Misc. 1970) (breast cancer resulted from bruises sustained in car accident). *Menarde v. Philadelphia Transport Co.*, 103 A.2d 681 (Pa. 1954) (breast cancer resulted from physical impact). *See generally* KENNETH R. FOSTER & PETER W. HUBER, *JUDGING SCIENCE: SCIENTIFIC KNOWLEDGE AND THE FEDERAL COURTS* (1997) (recounting examples of scientifically uncorroborated judicial decisions).

¹⁷ Other courts cited in *Ayers* hid their poor understandings of scientific cause more subtly. For instance, the Tennessee Supreme Court awarded damages in 1982 to a plaintiff who drank chlordane-contaminated well water and feared he would contract bladder cancer. The plaintiff recovered for his fears from the time he discovered the water had contained chlordane until the time his doctors assured him he had suffered no increased risk of bladder cancer. The court reasoned “recovery for the negligent infliction of mental anguish should be allowed in cases where, as a result of a defendant's negligence, a plaintiff has ingested an indefinite amount of a harmful substance.” *Laxton v. Orkin Exterminating Co.*, 639 S.W.2d 431, 434 (Tenn. 1982). The court never considered whether an “indefinite” ingestion of chlordane is objectively *known* to be a potential cause of bladder cancer when it is *ingested* (as opposed to inhaled, perfused across the skin or mucuous membranes, or otherwise absorbed). Even assuming that ingesting chlordane in *some* dose *is* “known” according to the best evidence to cause bladder cancer, it would have been impossible in *Laxton* to assess whether an “indefinite” dose could have caused cancer. A simple analogy illuminates this need to *quantify* a dose: ingesting a drop of water is not thought a cause of harm to the ordinary person, but ingesting so much water as to interfere with breathing goes by the term “drowning.”

has become trapped in a pattern of assigning liability for fear-related injuries¹⁸ in a fashion inconsistent with basic reality.

A. Causality and Risk

To understand why American courts have universally failed in constructing consistent, objective limitations on fear liability, we must appreciate that all fears—rational and irrational alike—arise through *perception* of risks (risks are a form of causal relationship, usually expressed as a probability) regardless of whether those risks are *objectively* verifiable (e.g., ingesting cyanide kills you) and hence conducive to rational fears, or not (e.g., physical impact causes breast cancer) and hence conducive only to irrational fears.¹⁹ We therefore begin our substantive discussion in Part II.A and II.B by revisiting basic principles of causality and risk.

B. Fear And Risk Communication

There is a second component to our motivational story about fear liability gone wrong. *Someone* placed the idea in Ms. Dempsey's fearful head that sore breasts resulting from a physical impact may indicate breast cancer contraction. Was that someone *really* the other driver when he collided with her? Would an isolated Ms. Dempsey, reared in the state of nature and denied access to the ideas and

¹⁸ This article does *not* distinguish among the various manifestations of fear-related "emotional distress": Phobias, Post-Traumatic Stress Disorder (PTSDs), Obsessive-Compulsive Disorder (OCD), Panic, or Generalized Anxiety Disorders (GADs). There is reason for this. As one author notes,

when comparing the physiological responses seen in phobics exposed to their feared objects with those seen in PTSD patients exposed to relevant traumatic scenes for the disorder, and with physiological responses during panic attacks, one is much more struck by the similarities than by the differences [Panic, phobias, and PTSD reflect the] activation of one and the same underlying anxiety response.

Arne Öhman, *Fear and Anxiety As Emotional Phenomena: Clinical, Phenomenological, Evolutionary Perspectives, and Information-Processing Mechanisms*, in HANDBOOK OF EMOTIONS 511–36 (Michael Lewis & Jeannette M. Haviland eds., 1992); *see also* S. Epstein, *The Nature of Anxiety with Emphasis Upon its Relationship to Expectancy*, in D. SPEILBERGER (ED.), ANXIETY: CURRENT TRENDS IN THEORY AND RESEARCH 292–334 (1972). *See generally* ISAAC M. MARKS, FEARS, PHOBIAS, AND RITUALS: PANIC, ANXIETY, AND THEIR DISORDERS (1987).

¹⁹ *Accord* Pichowicz v. Hoyt, No. Civ. 92-388-M, 2000 WL 1480445 (D.N.H. 2000) (rejecting fear of cancer claim because plaintiffs did not prove by a preponderance of the evidence that low level contaminants in their well caused neurotoxic effects, meaning their fears were "unreasonable").

teachings of mankind, spontaneously believe, “I may have just contracted breast cancer” after suffering a considerable blow to the torso?

We think not. The obvious reason is because the causal reality of breast cancer does not support this conclusion. But another reason is that cancer (except perhaps skin cancer) is not the sort of illness that would be identifiable or comprehensible to Ms. Dempsey through her *personal experiences* alone.²⁰ Risk communication (including risk education), however, permits laypersons’ understanding and comprehension of esoteric harms, such as cancer. When that risk communication sows incorrect understandings of reality, however, irrational fears—ones that are based on misrepresentations of reality—can occur.

Therefore, to assign fear liability, we must reflect not just on whether the alleged “risk” is objectively verifiable, but must also consider *who* is causing fear. Part II.C and II.D review biological and sociological findings on how fear is caused; these indicate that risk communicators are the predominant modern sources of fears.

After discussing both causality and risk communication, we demonstrate in Part III that law is largely heedless of (1) which fears are rational (i.e., based on objectively verifiable risks); and (2) how fears are often caused (by risk communication). Part IV reveals tort principles demand that risk communicators—the media and others—sometimes be held partly or wholly responsible for unwarranted or irrational fears.

C. Free Speech

Many readers may already be worrying that any proposal to place liability on risk communicators transgresses legal speech protections. This concern is quite natural and proper. Traditionally, free speech privileges—arising from communicative torts, the First Amendment, or elsewhere—stymie most attempts

²⁰ Courts have made this observation, for instance, in the context of medical malpractice lawsuits. *See, e.g., Bird v. Saenz*, 51 P.3d 324, 329 (Cal. 2002). In *Bird*, the court denied emotional distress liability sought by lay observers of procedure against negligent doctor because

courts have not found a layperson's observation of medical procedures to [be generally perceptive]. This is not to say that a layperson can never perceive medical negligence, or that one who does perceive it cannot assert a valid claim for NIED. To suggest an extreme example, a layperson who watched as a relative's sound limb was amputated by mistake might well have a valid claim for NIED against the surgeon. Such an accident, and its injury-causing effects, would not lie beyond the plaintiff's understanding awareness. But the same cannot be assumed of medical malpractice generally.

Id. See generally infra Part II.C.

to assess liability for the *effects* of communication.²¹ For risk communication, the meaningful bifurcation is between “*accurate*” *speech* (meaning the typical risk *perception* rendered by the communication is commensurate with the risk)²² and “*errant*” *speech* (meaning the typical risk perception is not commensurate with the risk).

Both of these forms of risk communication are generally exempt from liability. But the motivations for granting these free speech privileges are different for each class of speech, as we will now see.

Accurate Risk Communication. Even though all risk communication poses a risk of causing fear,²³ it is also rightly contended that *accurate risk communication* has social benefits.²⁴ Courts are reluctant to get in the game of weighing out the costs and benefits of accurate speech. Law simply protects most accurate speech summarily, without engaging in cost/benefit analysis. We have no objection to this categorical protection; in fact, this article endorses exonerating all communication that results in *accurate* risk perceptions.²⁵

Errant Risk Communication. The scope of the free speech privilege is not as evident for *errant speech*. This speech leads to irrational fears, and *also* fosters

²¹ *Accord* Forsyth County v. Nationalist Movement, 505 U.S. 123, 134–35 (1992) (striking down a law permitting a city official to set a parade fee based on that official’s estimate of police protection required because “[t]hose wishing to express views unpopular with bottle-throwers . . . may have to pay more for their permit Speech cannot be financially burdened, any more than it can be punished or banned, simply because it might offend a hostile mob.”).

²² Take care to note that simply because a statement contains objectively valid information about a risk, this does not necessarily equate to an accurate *perception* of a risk—psychological factors must still be taken into account. For instance, a horrifying scream, “FIRE!” in a theater promotes a different risk perception than a calm voice stating, “There is a fire in the theater.” Conclusions, innuendo, word choice, and visuals and audio selected are all critically important to avoiding the creation or maintenance of skewed or baseless public risk perception. *See, e.g.,* Daniel M. Wegner & Toni Giuliano, *Social Awareness in Story Comprehension*, 2 SOCIAL COGNITION 1, 14–15 (1983) (finding that where individuals are tacitly prompted to adopt perspective of certain group when recounting focal facts of stories, they do so); *see also* Elizabeth F. Loftus, *Make-believe Memories*, 58 AM. PSYCHOL. 86, 867 (2003) (finding that “suggestion can lead to false memories being injected outright into the minds of people”); Elizabeth F. Loftus & Hunter G. Hoffman, *Misinformation and Memory: The Creation of New Memories*, 118 J. EXP. PSYCH. 100, 100 (1989) (concluding that in formulating misperceptions, “misinformation acceptance plays a major role, memory impairment plays some role, and pure guessing plays little or no role.”). *See generally* Daniel M. Wegner et al., *Incrimination Through Innuendo: Can Media Questions Become Public Answers?*, 40 J. PERSONALITY AND SOCIAL PSYCH. 822 (1981) (similar findings).

²³ *See infra* Part II.D.

²⁴ *See infra* Part II.D. and *infra* Part IV.B.2.

²⁵ *See infra* Part IV.B.2.

resource misallocation in a misguided effort to prevent or manage risks.²⁶ It is clear that errant risk communication is inferior to accurate risk communication in its social worth. What is not clear is whether errant risk communication should therefore receive less legal protection than does accurate risk communication.

Apart from familiar categories like obscenity, indecency, fighting words, incitement, defamation, or (possibly) commercial speech,²⁷ there is pervasive reluctance to declare any additional class of speech “inferior” and subject it to increased liability, for three primary reasons.

First, judges are uncomfortable invoking notoriously vague and loose tests such as whether the speech is “false and misleading.”²⁸ If speech is too frequently misclassified using such non-rigorous standards, courts will inadvertently penalize (and thus chill) *accurate* communication. In light of these tests’ imprecision, courts are understandably remiss to assign liability for *any* communication.

Second, there is a prevailing belief among free speech defenders that even errant speech on its own offers some benefit. As John Stuart Mill famously stated in *On Liberty*:

[T]hough [a] silenced opinion be an error, it may, and very commonly does, contain a portion of truth; and since the general or prevailing opinion on any subject is rarely or never the whole truth, it is only by the collision of adverse opinions that the . . . truth has any chance of being supplied.²⁹

This Millian thinking means that in the “marketplace of ideas,” false or even deceitful opinions can strengthen the credibility and refine the accuracy of truthful ideas.

Third, as Alexander Meiklejohn noted over fifty years ago, many analogize public speech to a town hall meeting, in which *all* viewpoints—however true or false—should be represented to arise at a consensus. Only this, Meiklejohn contended, could lead to a wise public policy. By extension, one might contend that effective risk policymaking—such as risk management and risk prevention—demands this broad public participation, including even those voices making

²⁶ *Id.*

²⁷ *But see* Alex Kozinski & Stuart Banner, *Who's Afraid of Commercial Speech?*, 76 VA. L. REV. 627, 653 (1990) (demonstrating the lower level of First Amendment protection given to consumer speech).

²⁸ *Cent. Hudson Gas & Elec. Corp. v. Pub. Serv. Comm'n*, 447 U.S. 557, 593 (1980).

²⁹ JOHN STUART MILL, *ON LIBERTY AND OTHER ESSAYS* 59 (John Gray ed., Oxford Univ. Press 1998) (1869).

objectively false statements about “risks.”³⁰ But what if these three propositions for why errant speech is *generally* protected sometimes do not apply to errant risk communication?

Take the first objection: imprecise standards means liability based on the effects of speech would chill accurate speech. What if a metric offered unprecedented objectivity in rapidly typifying which risks are real and which are mere fantasies? If such a test existed and were readily accessible to risk communicators at the time they reported ostensible “risks,” judicial worries about overdetering accurate risk communication by penalizing errant risk communication should dissipate.³¹ Such a method does now exist with Evidence-Based Logic (EBL) and is a focus of Part II.B.

On to John Stuart Mill’s point that even false opinions can contribute to the advancement of knowledge. Mill was speaking in the context of *politics*, and speaking about *opinions*.³² The mistake that has long been made is to assume that Mill’s theory would apply to science no differently than to politics, art, or religion—that scientific explanation (including risk identification) is a product of “the collision of *opinions*.”³³ It is not. Indeed, the Evidence-Based Logic movement is exploding expressly because scientists and policymakers are realizing that “opinion, experience, intuition, judgment, and scientific inference”—even from the most respected authorities—simply does not suffice to objectively establish risks (or any scientific phenomena).³⁴ Only *explanations* predicated on scientific evidence “derived from an objective, unbiased, and systematic analysis of scientific knowledge” do.³⁵ This distinction—between *explanations* (based on the best available evidence) and *improper opinions* (assertions resting partly or wholly upon assumptions not based on the best

³⁰ See generally ALEXANDER MEIKLEJOHN, *FREE SPEECH AND ITS RELATION TO SELF-GOVERNMENT* (1948).

³¹ *Zamora v. Columbia Broadcasting System*, 480 F. Supp. 199, 206–07 (S.D. Fla. 1979) (“One day, medical or other sciences . . . may convince . . . the Courts that the delicate balance of First Amendment rights should be altered to permit some additional limitations [on speech].”).

³² See also *Whitney v. California*, 274 U.S. 357, 375 (1927) (Brandeis, J., concurring) (“[F]reedom to think as you will and to speak as you think are means indispensable to the discovery and spread of *political* truth. . . .”) (emphasis added).

³³ See, e.g., Alexander Meiklejohn, *The First Amendment is an Absolute*, 1961 SUP. CT. REV. 245, 255 (1948) (contending art, literature, philosophy, and sciences should be included in the First Amendment, as they help “voters acquire the intelligence, integrity, sensitivity, and generous devotion to the general welfare that, in theory, casting a ballot is assumed to express.”).

³⁴ Philip S. Guzelian & Christopher P. Guzelian, *Authority-Based Explanation*, 303 SCIENCE 1468, 1468 (2004).

³⁵ *Id.*

available evidence, such that the audience *mistakes* the opinion as scientific explanation)—separates acceptable risk communication from unacceptable scientific speech.³⁶

Third and finally, the apple-pie metaphor of town-hall-style consensus to achieve *risk* explanation (and in turn, risk management or risk prevention), is simply inappropriate. Fomenting consensus may be well and good for *political* disputes, but only *hinders* the proper advancement of scientific explanation and resulting policymaking. Author, and former Harvard medical student Michael Crichton, has made this conclusion quite forcefully, although he is certainly not the only one to have reached it:³⁷

I want to . . . talk about this notion of consensus, and the rise of what has been called consensus science. I regard consensus science as an extremely pernicious development that ought to be stopped cold in its tracks. Historically, the claim of consensus has been the first refuge of scoundrels; it is a way to avoid debate by claiming that the matter is already settled. Whenever you hear the consensus of scientists agrees on something or other, reach for your wallet, because you're being had.

³⁶ This author is the first to acknowledge sometimes the best evidence is inconclusive or simply unavailable to support or disavow a specific hypothesis. Understandably, scientists, policymakers, and risk communicators may still need to make risk pronouncements on an inferential basis. But when they do so, these speakers are offering *opinions*, not explanations, about scientific phenomena, and they must ensure that the audience understands their pronouncements as such.

[Scientists] admittedly must make decisions with inadequate scientific knowledge. It may be prudent for preventative purposes to act as if some chemicals present health risks, but such decisions should never be confused with evidence-based conclusions that such agents do cause harm. The obvious solution is to explicitly acknowledge when shortcomings in the amounts or quality of evidence necessitate a reversion to authority.

Id. at 1469.

³⁷ See, e.g., Cary Coglianese, *Is Consensus an Appropriate Basis for Regulatory Policy?*, in ENVIRONMENTAL CONTRACTS: COMPARATIVE APPROACHES TO REGULATORY INNOVATION IN THE UNITED STATES AND EUROPE 93–113 (Eric Orts & Kurt Deketelaere ed., 2001); *The Limits of Consensus*, 41 ENVIRONMENT 28–33 (1999); see also Cass R. Sunstein, *Free Speech Now*, 59 U. CHI. L. REV. 255, 301 (1992) (contending free speech is principally about *political* deliberation); Sally Squires, *Flip-flops: In the Information Age, Conventional Medical Wisdom is Often Overturned*, WASH. POST (May 4, 2004), available at <http://www.post-gazette.com/pg/04125/310511.stm> (“Instead of convening consensus conferences—occasional high-profile gatherings of top experts to update clinical guidelines—today experts cull through hundreds of scientific papers, using statistical models to weigh the combined value of findings. These conclusions often overturn those of individual studies done previously.”).

Let's be clear: the work of science has nothing whatever to do with consensus. Consensus is the business of politics. Science, on the contrary, requires only one investigator who happens to be right, which means that he or she has results that are verifiable by reference to the real world. In science consensus is irrelevant. What is relevant is reproducible results. The greatest scientists in history are great precisely because they broke with the consensus.

There is no such thing as consensus science. If it's consensus, it isn't science. If it's science, it isn't consensus. Period.

In addition, let me remind you that the track record of the consensus is nothing to be proud of . . . Finally, I would remind you to notice where the claim of consensus is invoked. Consensus is invoked only in situations where the science is not solid enough. Nobody says the consensus of scientists agrees that $E=mc^2$. Nobody says the consensus is that the sun is 93 million miles away. It would never occur to anyone to speak that way.³⁸

What is more, even if a medley of opinions or hypotheses about risk *did* matter in scientific explanation of risks (and it does not), it is unclear how *laypersons'* opinions contribute meaningfully to the process of objectively establishing scientific risks.³⁹ The contention that allowing a robust public debate, in which scientifically unknowledgeable parties *opine* about patently false "risks" will somehow improve the quality of scientific explanation, is incorrect. The case for protecting errant risk communication *aimed at informing non-experts* about "risks" not corroborated by EBL is therefore weaker than has traditionally been believed.⁴⁰

We must pause to emphasize that in these preceding paragraphs, we are emphatically *not* suggesting that scientific debate should be muzzled or restricted. Our point is subtler: (1) that scientific explanation or debate is based, wherever possible, only on the best, currently available scientific evidence that addresses the question at hand; and (2) where such best evidence is unavailable, the speaker who wishes to offer his inference or opinion must ensure that his audience perceives and reacts to his hypothesis as such, not as scientific explanation.

³⁸ Michael Crichton, *Aliens Cause Global Warming*, Lecture at California Institute of Technology (Jan. 17, 2003) (describing case examples such as continental drift, memory repression, fiber and colon cancer, hormone replacement therapy, saccharine, margarine, and the etiologies of puerperal fever, pellagra, smallpox, and germs to demonstrate how "consensus" science has historically frustrated scientific explanation).

³⁹ See *infra* note 109 (discussing disjoint between experts and public risk knowledge, *Bird v. Saenz*, etc.).

⁴⁰ We stress that there is still healthy room for robust scientific debate about risks under EBL. Our point is that that debate must be evidence-based and follow EBL parameters, rather than devolve into a free-form, opinion-based or authority-based cacophony.

Rather than stifle debate, EBL-based risk communication is proving to offer healthier, *more accurate* debate when scientific explanations, not inferences, conjectures, or opinions, are the staple of discussion.

This brief overview, contending that errant risk communicators under some circumstances can be penalized, may not convince all readers that free speech difficulties can be overcome. That is fine. Our aim here is not to convince. This free speech discussion is quite preliminary: aiming to motivate the issue, not at all to exhaust it. Our point is simply that a strong case can be made that free speech privileges—typically quite robust in insuring speakers against the effects of their communications—apply differently in the contexts of risk communication and, more generally, scientific explanation.

Regardless of free speech considerations, we will proceed by presuming we live in a world in which errant risk communication is perfectly regulable. The reason is so that we can compute and then *subtract* that amount of fear liability that would accrue to the risk communicator *absent free speech protections* from the excessive fear liability that physical risk creators—physicians, manufacturers, the car driver who hit Ms. Dempsey, and myriad others—are currently subjected to.⁴¹

II. CAUSALITY, RISK, AND FEAR'S CAUSES

As we noted in Part I.A, without some objective measure of risk, it is impossible to ascertain which risks are real (and fears based on those risks are rational) and which are not. We therefore turn to a discussion of causality and risk next.

A. Causality

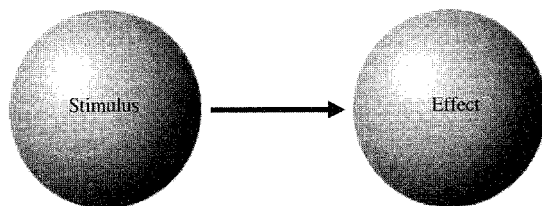
An *effect* is a changing element in the universe. In turn, a *stimulus* “causes” one or more effects (in the next section, we will see a *risk* is the causal relationship involving a stimulus and an *undesirable* effect).⁴² Causality is a thorny word. Aristotle put forth a classic definition: an external stimulus capable of producing internal change in an object (i.e., an “effect”) is the “cause” of that

⁴¹ Even if free speech considerations were to prevent liability from attaching to risk communicators, it seems patently unjust that others should be forced to compensate for their harm (excessive fear).

⁴² A stimulus in its broadest sense could be any act, omission, action, event, circumstance, element, occurrence, and so on, as long as it is something that exists. Because tort law focuses on humans' acts, when we speak of a “stimulus” after this introductory section, we will almost categorically be referring to *anthropogenic* stimuli—actions, omissions or creations *by people in a context*.

change.⁴³ The Aristotelian causal conception emphasized *externality* and *production*—a stimulus brings about an effect remote and distinct from that stimulus. Philosophers and scientists have usually preserved this external production principle.⁴⁴ Symbolically, causality is represented as a “causal path,” $A \rightarrow B$, with an arrow between stimulus and effect:

Figure 1: $A \rightarrow B$: A Finite Causal Path

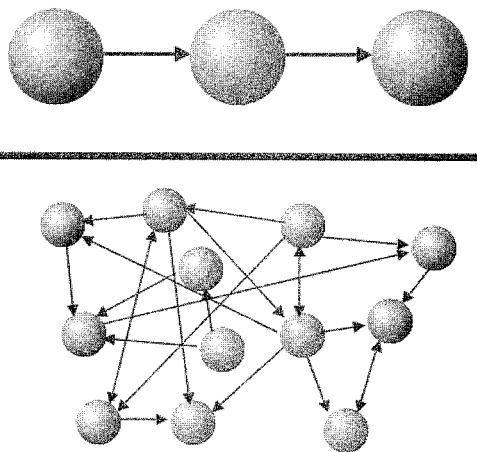


A “causal chain” involves multiple paths, sometimes with causality running bi-directionally, where our Dots represent both stimuli to subsequent effects and effects to antecedent stimuli:

⁴³ ARISTOTLE, PHYSICS, bk. II, ch. 3, 194b5, at 28–29 (W. Charlton trans., Clarendon Press 1970) (350 B.C.E.) (defining efficient cause as “the primary source of the change or staying unchanged: for example, the man who has deliberated is a cause, the father is cause of the child, and in general that which makes something of that which is made, and that which changes something of that which is changed”); ARISTOTLE, METAPHYSICS, bk. I, ch. 3, 983a,b, (W.D. Ross ed., Clarendon Press 1924) (350 B.C.E.) (defining four elements of causality).

⁴⁴ GEORGE W.F. HEGEL, SCIENCE OF LOGIC § 1263 (A.V. Miller trans., 1998). (“[Cause and effect] are implicitly one, but . . . each is external to itself, and consequently in its unity with the other is also determined as other against it. Therefore, though the cause has an effect and is at the same time itself effect, and the effect not only has a cause but is also itself cause, yet the effect which the cause has, and the effect which the cause is, are different, as are also the cause which the effect has, and the cause which the effect is.”); Pierre-Simon de Laplace (1804) (“I have sought to establish that the phenomena of nature can be reduced in the last analysis to actions at a distance between molecule and molecule, and that the consideration of these actions must serve as the basis of the mathematical theory of these phenomena.”), quoted in J.J. O’Connor & E.F. Robertson, *Pierre Simon Laplace* (1999), available at: <http://www-groups.dcs.st-and.ac.uk/~history/Mathematicians/Laplace.html>.

Figure 2: A Simple Finite Causal Chain and a Complex Finite Causal Nexus



The path arrow symbolizes causality, but it does not suggest a *method* for proving that a particular stimulus *A* “causes” a particular effect *B*. Galileo sought to rectify this gap. He postulated that “efficient causality” exists where a stimulus *A* is both necessary and sufficient to the outcome *B*. This conception of causality is represented as a four-box diagram, with necessity on one axis, sufficiency on the other. Efficient cause, according to Galileo, is found only in Box I, shaded below:⁴⁵

Figure 3: Galilean Causality

	Not Necessary ($\sim N$)	Necessary (N)
Sufficient (S)	II ($\sim N, S$)	I (N, S)
Not Sufficient ($\sim S$)	III ($\sim N, \sim S$)	IV (N, $\sim S$)

⁴⁵ See Galileo, *Il Saggiatore* [*The Assayer*] in *DISCOVERIES AND OPINIONS OF GALILEO* 231, 231–80 (Stillman Drake trans., 1957) (1623).

Galileo's causality chart initially seems helpful. Philosophers and mathematicians, however, discovered problems with it.⁴⁶ One identified by Pierre Laplace and popularized by John Stuart Mill was that Galileo envisioned causality as a process involving one stimulus (or a finite number of stimuli) to one effect (or a finite number of effects). Causality to Laplace and Mill was instead *holistic*: a universal interconnectedness, involving a number of stimuli and effects beyond human comprehension (and thus "infinite").⁴⁷ By this, every effect is the *joint* product of *all* stimuli that exist or have existed in the universe at any time prior to that effect. If one took away any one stimulus, it would be impossible to know how that deletion would make a difference in changing the effect unless one knew the causal interconnectivity of *all* remaining stimuli in that universe.⁴⁸ Because humanity's knowledge is finite, Galileo's efficient causality is unattainable.

This holistic critique found advocates in the logical positivist movement (spearheaded by Bertrand Russell⁴⁹), and confirmation in scientific fields like

⁴⁶ One significant protest, put forth in various statements by Descartes, Locke, Berkeley, Hume, and Kant, was that causality might be nothing more than a *relation*—an entirely fictional mental construct. See generally RENÉ DESCARTES, *MEDITATIONS ON FIRST PHILOSOPHY* (George Heffernan trans., 1992) (1641); JOHN LOCKE, *AN ESSAY CONCERNING HUMAN UNDERSTANDING*, bk. II, ch. 26, § 1 (1690); GEORGE BERKELEY, *WORKS passim* (1721); DAVID HUME, *A TREATISE OF HUMAN NATURE*, bk. I, part III, §§ ii–iv (1740) and *AN ENQUIRY CONCERNING HUMAN UNDERSTANDING*, § vii (1748); IMMANUEL KANT, *KRITIK DER REINEN VERNUNFT* [CRITIQUE OF PURE REASON] in 42 *BRITANNICA GREAT BOOKS* 1–253 (J.W. Meiklejohn trans., 1989) (1787). One cannot and should not dismiss this possibility. Yet we do not address the issue further. If we are simply "brains in a vat," significantly greater existential crises than whether a particular plaintiff should recover from a defendant for injury will arise!

⁴⁷ See generally PIERRE SIMON DE LAPLACE, *A PHILOSOPHICAL ESSAY ON PROBABILITIES* (F.W. Truscott & F.L. Emory trans., 1951). Laplace stated:

We may regard the present state of the universe as the effect of its past and the cause of its future. An intellect which at any given moment knew all of the forces that animate nature and the mutual positions of the beings that compose it, if this intellect were vast enough to submit the data to analysis, could condense into a single formula the movement of the greatest bodies of the universe and that of the lightest atom; for such an intellect nothing could be uncertain and the future just like the past would be present before its eyes.

Id. at 4. See also JOHN STUART MILL, *SYSTEM OF LOGIC* ("[B]y the cause of an event one has to understand the totality of changing conditions, both positive and negative, which in their cooperation invariably and unconditionally result in the mentioned event.").

⁴⁸ John Bernal explained this concept succinctly: "[C]hance variations or side reactions are always taking place. These never completely cancel each other out, and there results an accumulation which sooner or later provides a trend in a different direction from that of the original system." JOHN D. BERNAL, *THE FREEDOM OF NECESSITY* 31 (1949).

⁴⁹ Bertrand Russell, *On the Notion of Cause*, in *MYSTICISM AND LOGIC* 188 (1908).

quantum mechanics⁵⁰ and chaos theory.⁵¹ Holists don't dismiss the idea that certain events or acts statistically *predict* for the creation or deletion of others. But they reject the representation of a causal path or chain between *finite* sets of stimuli and effects, such as in Figures 1 and 2 above, "as a thread external and parallel to the remaining threads."⁵²

For a time, the holists' critique threatened to eradicate causality. To a Laplacian, the only possible cause is the universe and all its elements.⁵³ Finite collections of stimuli and effects simply do not fit Box I. Similarly, humans cannot identify any relationship that fits Boxes II (sufficient but unnecessary causal stimulus) or IV (necessary but insufficient causal stimulus). Instead, *all* relations "known"⁵⁴ to man belong in Box III, which, by definition, are *non-causal* stimuli/effect pairings (for which the stimuli are neither necessary nor sufficient in isolation).

So persuasive was this attack that even diehards began to concede that "[s]trict causal lines or chains simply do not exist."⁵⁵ But causality began to rise from the ashes in the 1960s. Philosopher Mario Bunge explains the reason for this resurrection was that *finite causality*—the isolation of artificial causal paths

⁵⁰ See, e.g., HENRI POINCARÉ, THERMODYNAMIQUE ix (1908):

On the deterministic hypothesis, the state of the universe is determined by an excessively large number, n , of parameters which I shall call x_1, x_2, \dots, x_n . If the value of these n parameters are known at any given instant, and their time derivatives are also known, then the values of the same parameters at a previous or at a later time can be calculated.

Id.

⁵¹ See generally ILYA PRIGOGINE, THE END OF CERTAINTY: TIME, CHAOS, AND THE NEW LAWS OF NATURE (1997); JAMES GLEICK, CHAOS: MAKING A NEW SCIENCE (1987).

⁵² MARIO BUNGE, CAUSALITY AND MODERN SCIENCE 132 (Dover Publication 3d ed. 1979).

⁵³ Charles Peirce spearheaded an even broader critique of causality in the 1800s. His theory of accidentalism ("tychism") states that even the most entrenched "natural laws" were not invariant, but rather stronger or weaker "habits," and that "causality"—whether Laplacian or finite in scope—has never been demonstrated. It is often debated whether Peirce, whose views shifted over time, was advocating an absolute lack of natural determinism, or simply was taking a view many quantum and chaos theorists later would adopt: that many phenomena are statistically determinant, but not causal in the Galilean or Newtonian sense. Peirce's collective writings were scattered and only recently have they been put in a single posthumous treatise. See generally THE WRITINGS OF CHARLES S. PEIRCE: A CHRONOLOGICAL EDITION (1986).

⁵⁴ By "known," we mean that humans *believe* the relationship to be true from experience. Part II.B makes preliminary incursions into how one must optimally develop such epistemic "knowledge."

⁵⁵ BUNGE, *supra* note 52, at 133.

between *finite* numbers of stimuli and effects—remains man's best rough-and-ready methodology for the acquisition of knowledge:

The isolation of a system from its surroundings, of a thing or process from its [infinite] context, of a quality from the complex of interdependent qualities to which it belongs—such “abstractions,” in short, are indispensable not only for the applicability of causal ideas but for any research, whether empirical or theoretical [I]t is the concern of science to analyze such mazes of interconnected elements, singling out a few entities and features, and focusing on them with the hope of attaining a better understanding of the whole after the singled-out parts have finally been replaced in it. Holists complain that this procedure damages the totality concerned, and this is true; but analysis is the sole known method of attaining a rational understanding of the whole: first it is decomposed into artificially isolated elements, then an attempt is made to synthesize the components. The best grasp of reality is not obtained by respecting fact and avoiding fiction but by vexing fact and controlling fiction.⁵⁶

Bunge further suggests such finite causal paths or chains “afford both a satisfactory approximate picture [of universal interconnectedness] and an adequate explanation of the essential mechanism of becoming” if the chains are drawn only “in particular respects, in limited domains, and for short time intervals.”⁵⁷

Building finite causal chains is analogous to painting. Claude Monet's Impressionist haystacks were not real hay, yet his understanding of light, shading, color, and tone enabled him to render what most people recognize as “haystacks.” The same principle has held in scientific explanation. Einstein's theory of relativity displaced Newtonian force as the “proper” approximation of velocities approaching light speed. Yet Newtonian force equations are still taught in introductory physics classes and were employed in sending men to the moon. So too is finite causality a sufficient everyday means to categorizing relationships. We don't need quantum mechanics to build a bridge. Chaotic or quantum events that radically defy causal models do not typically impinge on our daily lives or even on most scientific investigation. This fact permits finite causality to persist so hardily.⁵⁸

⁵⁶ *Id.* at 129.

⁵⁷ *Id.* at 133.

⁵⁸ Yet, in all of this, we cannot stress often or mightily enough that nearly all thinkers agree *there is no such thing as a “true” (Laplacian) causal pairing*; every stimulus and effect construct is confined to Box III. Finite causality is not Laplacian causality. To be sure, many Box III pairings look like Box I, II, or IV relations; shooting someone in the head with a high-caliber, hollow-point bullet, for instance, seems like a sufficient, but not a necessary, “cause” of physical injury or death—Box II. But the temptation to classify this act as such must be resisted.

Why are we talking heavy philosophy about things like “finite causal chains”? Because fear is based on perception of *risks*, and risks, properly constructed, must be based on *objectively good* depictions of finite causality. Learning about risks *can* be an effective aid for avoiding, minimizing, or preventing dangers, just as the color yellow was a tool in Monet’s arsenal for objectively successful representations of reality. However, just as a lesser artisan lacking objective ability and discretion will never paint anything closely resembling a haystack, no matter how much color yellow he has (or, perhaps more appropriately, *because* of how much color yellow he has), so too can conclusions and “remedies” based on bogus “risks” be undesirable—think again of the *Dempsey* court’s link between physical trauma and breast cancer. What is required is a *method* by which to objectively verify hypothesized “risks.” We’ll think about this next.

B. Risk

Consider the following five scenarios:⁵⁹

- (1) What is your risk of being trampled by a non-equine horse?
- (2) What is your risk of being trampled by a horse galloping faster than the speed of light?
- (3) What is your risk of being trampled by a four-legged alien?
- (4) What is your risk of being trampled by a horse?
- (5) What is your risk of dying?

These questions all are asking about risks. You’re probably inclined to answer some or all of the questions with numbers. This reflex should be cheered (hurrah!); absent *quantification*, risks are of no use in risk assessment or management.⁶⁰ Many courts have overlooked or have even disavowed this basic requirement.⁶¹ But let us resist that urge for one instant. Instead, we will address

No amount of empirical investigation, indeed nothing short of infinite knowledge, shakes *any* causal construct of its Box III moorings.

⁵⁹ Harvard physicist Dick Wilson helped motivate these scenarios. *See generally* Richard Wilson, *Ensuring Sound Science in the Courts*, 26 TECH. IN SOCIETY 501 (2004).

⁶⁰ *See* JOHN C. CHICKEN & TAMAR POSNER, *THE PHILOSOPHY OF RISK* 11 (1998) (“[A]ny precise discussion of the acceptability of a risk must describe the risk in quantitative terms; if the risk is described only in soft, qualitative terms, any conclusions about its acceptability will be equally soft or, to put it another way, will be merely uncertain speculation.”); CASS R. SUNSTEIN, *RISK AND REASON: SAFETY, LAW, AND THE ENVIRONMENT* 111 (2002) (suggesting that accounting for both quantitative and qualitative aspects of risk is necessary for adequate risk assessment); *see also infra* note 305.

⁶¹ *See, e.g., In re Paoli R.R. Yard PCB Litig.*, 35 F.3d 717, 788 (3d Cir. 1994) (“Paoli II”) (“Nor do we think that an expert must quantify the increased risk.”); *Merry v. Westinghouse Elec. Corp.*, 684 F.Supp. 847, 850 (M.D. Pa. 1988) (criticizing a quantification of risk

each hypothetical by first asking whether the proposed activity is *possible*, and then answer what the *probability* of each risk's occurrence is.

Begin with scenario one: Is it possible to be trampled by a non-equine horse? How silly! Horses, by definition, are equine. A non-equine horse is what Plato called a *logical impossibility*,⁶² it is impossible because it requires an object to embody a principle and its logical opposite. Because such a creature is impossible, we are inclined to say that the *probability* of being trampled by one is zero.

Scenario two violates Einstein's laws of relativity, which indicate that no object with mass can exceed light speed. Just as in the first question, we conclude this is impossible. The justification, however, is not the same as in the first scenario. There is nothing illogical about a warp speed horse. But the act defies a *natural law*. This is what permits us to conclude that Scenario two is impossible. By extension, the *probability* of being trampled is zero.

Scenario three is interesting. Self-professed alien abductees aside, there is no convincing evidence of alien life yet. But does the fact that aliens are not within our experience divide possibilities and impossibilities, just as laws of nature do? Surely most would say no. Is it not "possible" that a four-legged alien could descend from the sky and trample one of us on Fifth Avenue? Although the event is highly *improbable*, the *possibility* cannot be "ruled out"; it does not violate a known law of nature. Notice from the last sentence that we have a desire in this alien-trampling scenario to juxtapose our discussion of its possibility with its probability. We will return to this point momentarily.

In Scenario four, we assume there would be little debate that it is "possible" to be trampled by a horse—there are numerous historical and ongoing examples of such accidents. Foreseeable debate would instead arise in estimating the *probability* of a particular person's being trampled.

In Scenario five we address our mortality.⁶³ Is it "possible" that someday humans might live forever? The answer could be yes—we cannot point to any

requirement because "[w]e think this formulation unduly impedes the ability of courts to recognize that medical science may necessarily and properly intervene where there is a significant but unquantified risk of serious disease").

⁶² See, e.g., PLATO, *MENO passim* (G.M.A. Grube trans., 1976) (invoking Socratic "elenchus" to prove logical impossibilities).

⁶³ Observe that this particular risk proposition doesn't take exactly the same form as the other four; while it focuses upon a finite effect (death), there is no singled-out cause being asked about. Rather, this risk proposition asks for the likelihood of death when *aggregating* all causes. Although risk propositions such as this are commonly (and often properly) referred to as "risks," they are of little use for legal purposes. Without identifying a finite set of causes and a finite set of effects, there is no viable method for imposing individual liability. See *infra* note 69.

natural law that prohibits immortality.⁶⁴ But no sane person speaks of his own death as “impossible.” Similarly, there is no debate about the *probability* of death. For death as we “know” it at the start of the twenty-first century, the possibility and probability are each definite.

The five scenarios suggest that merely stating a relationship, $A \rightarrow B$, as a quantified probability does not suffice to establish that $A \rightarrow B$ is a risk. One *first* must address the *possibility* of $A \rightarrow B$ before a quantified “risk” has meaning. There are three classes of possibility: (1) *logical*, (2) *nomological*, and (3) *epistemic*. A possibility must be *logical*; a “non-equine horse” should never be included in a finite causal chain. A possibility must also be *nomological* (i.e., comply with laws of nature); the alleged owner of a warp-speed horse cannot be held legally liable when the horse is nomologically impossible.⁶⁵ These are easy requirements. But for each of the remaining scenarios (alien trampling, ordinary horse trampling, and death), notice we cannot rule out the “possibility” of each causal relationship—*each* is a nomological possibility. Nomological possibilities are causal *hypotheses*, conjectures. They await confirmation, and might in some cases have been partly corroborated through scientific investigation, but are either not yet scientifically known “facts,” or, if they at one time had achieved such “factual” status, have reverted to mere nomological possibilities because of newer contradictory evidence. Thus, an alien trampling is nomologically possible, even

⁶⁴ Accord Nuno Arantes-Oliveira et al., *Healthy Animals with Extreme Longevity*, 302 SCIENCE 611 (2003) (reporting that humans could live actively for hundreds of years if they responded similarly to genetic and hormonal changes rendered in a successful experiment on roundworms). It is thought that cancer cells become “immortal”—if humans could be composed of such cells without adverse effect, “immortality” might be conferred. See Mikhail V. Blagosklonny, *Cell Immortality and Hallmarks of Cancer*, 2 CELL CYCLE 296, 296 (2003) (reporting that “[i]n growth-limiting conditions, cells that express telomerase and inactivate tumor suppressors have a selective advantage due to resistance to growth arrest [and] [a]ccidentally such [cancer] cells become immortal”). The late author William Saroyan said that “[e]verybody has got to die, but I always believed an exception would be made in my case. Now what?” Thomas Christensen, *Famous Last Words*, at <http://webs.lanset.com/bookfolk/lastword.htm> (last visited Oct. 17, 2004). Saroyan’s statement is more likely to evoke smiles than serious discussion.

⁶⁵ How scientific laws are established is, like any issue of knowledge, a topic for epistemologists. We leave this debate to them, inasmuch as it is not hugely important for our purposes of distinguishing nomological from epistemic possibility. The interested reader can consult IGOR HANZEL, *THE CONCEPT OF SCIENTIFIC LAW IN THE PHILOSOPHY OF SCIENCE AND EPISTEMOLOGY: A STUDY OF THEORETICAL REASON* (1999); JOHN W. CARROLL, *LAWS* (1993); DAVID ARMSTRONG, *WHAT IS A LAW OF NATURE?* (1983); Carl G. Hempel & Paul Oppenheim, *Studies in the Logic of Explanation*, in *ASPECTS OF SCIENTIFIC EXPLANATION & OTHER ESSAYS IN THE PHILOSOPHY OF SCIENCE* 245 (Carl G. Hempel ed., 1965); Carl G. Hempel, *Postscript (1964) to Studies in the Logic of Explanation*, in *ASPECTS OF SCIENTIFIC EXPLANATION* (Carl G. Hempel ed., 1965).

if it is *unknown*.⁶⁶ Similarly, breast cancer resulting from physical impact in a car accident as in *Dempsey* is possible, even if the plaintiff's own physician acknowledges he does not *know* about physical impacts causing breast cancer.

Epistemic possibilities, in contrast, are those nomological possibilities that are objectively *known*—causal relations that are considered “facts” on the basis of the best scientific evidence at a given moment in time.⁶⁷ A trampling by an ordinary horse is *known*—it has happened before, continues to happen in modern times, and is expectable as long as man and horse interact. Death is likewise nomologically possible *and* known to occur.

A liability rule must be based on epistemic possibility. In this past century, there has been insufficient discussion by philosophers or legal theorists of this need.⁶⁸ But a few late-19th and early-20th century European thinkers, beginning with German physiologist and epistemologist, Johannes von Kries, recognized it.⁶⁹ In a forgotten but important 1886 publication, von Kries railed against use of

⁶⁶ Compare EUGENE F. MALLOVE & GREGORY L. MATLOFF, *THE STARFLIGHT HANDBOOK* (1989) (restricting discussion of space travel to present and reasonably anticipated technologies), with JOHN H. MAULDIN, *PROSPECTS FOR INTERSTELLAR TRAVEL* (1992) (discussing nomological possibilities of space travel, including space warps, Zero Point Energy and Higgs fields).

⁶⁷ Philosophers might find our term “epistemic possibility” ambiguous, because “epistemic” simply means “known” possibility. An epistemic possibility could be “subjectively” known or “objectively” known. By “epistemic,” we are referring *only* to “objectively known” possibilities. We prefer “epistemic” because the word “objective” has too much linguistic baggage attached already.

⁶⁸ Cf. *Stordahl v. Rush Implement Co.*, 417 P.2d 95, 99 (Mont. 1966) (“Whenever a medical expert testifies that an asserted cause of disease is *possible*, this alone is not to be accepted as reasonable medical proof.”).

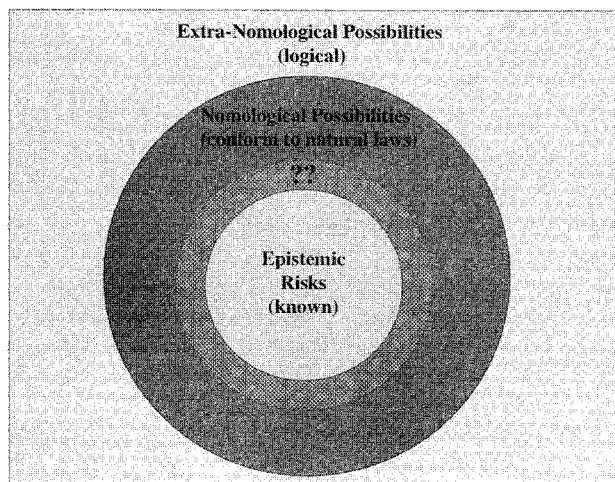
⁶⁹ Prior to von Kries, the reigning causality theorist was Maximilian von Buri, whose conception of causality-as-applied-in-law was Laplacian:

[T]he German criminal jurist, von Buri, . . . developed the theory of *conditio sine qua non* in the sense of a so-called doctrine of equivalence. Since all cooperating conditions within the [Laplacian] causal relation are equally necessary no one of them could be eliminated without at the same time canceling the effect, and since determining their greater or lesser quantitative operations transcends human cognitive ability, he formulated the statement that all conditions are equal in value [Von Buri concluded] that every *conditio sine qua non* may separately be viewed as a cause [in law], when all others are given.

HERMAN DOOYEWEERD, 2 ESSAYS IN LEGAL, SOCIAL, AND POLITICAL PHILOSOPHY 40 (1996). Von Buri recognized that determining Laplacian causality is beyond human capability. To avoid this problem, he concluded that legal causality should be inferred *equally* for *each* condition. This doctrine of equivalence has a homespun “equality” appeal, but everything in the universe has such Laplacian causal properties. Under the doctrine of equivalence, the judge who sentences a murderer is also a cause of that murder, simply because the judge existed at the

quantified probabilities for which the underlying “possibility” is not objectively known.⁷⁰ To resolve possibility in any other fashion or, worse, to ignore it, would make probabilities *appear* to reflect causal inference when in fact they might not.⁷¹ What has been missing, however, is a consistent, objective methodology by which to separate epistemic possibilities from nomological ones. The dividing “line” is a fuzzy boundary, within which it is occasionally open to debate whether a given stimulus-and-effect relationship is nomological or epistemic.⁷² But the exception does not undercut the rule. The existence of legitimate debate over how to classify some possibilities that rest at the interface does not disprove the logic of a dichotomous categorization. Most pitches are called either balls or strikes based on a predefined strike zone, even if some close pitches spawn controversy:

Figure 4: Classes of Possibilities



time it occurred. Because the doctrine of equivalence admits such silly propositions, it isn't useful for establishing liability.

⁷⁰ JOHANNES VON KRIES, *DIE PRINCIPIEN DER WAHRSCHEINLICHKEITSRECHNUNG* 75–112 (1886, repr. 1927). See generally JOHANNES VON KRIES, *ÜBER DEN BEGRIFF DER OBJEKTIVEN MÖGLICHKEIT UND EINIGER ANWENDUNGEN DESSELBEN* (1888). It is said that von Kries's work on epistemic possibilities (“objective Möglichkeiten”) had sizeable influence on John Maynard Keynes's later work on uncertainty.

⁷¹ *Id.*

⁷² Within such a shadow realm, where there is only some or no evidence compelling a conclusion that a possibility is epistemic, we foresee nothing wrong with presenting that information, as long as the public does not perceive that possibility as a confirmed risk. The risk communicator should simply take care to ensure his audience does not perceive the nomological possibility is actually a risk (or, for that matter, if the risk is epistemic, that he does not cause the audience to misperceive its frequency or extent of harm.)

This is emphatically *not* to say classifying every $A \rightarrow B$ relationship will be murky or difficult. Alien trappings are not “known” because they are only hypothetical possibilities according to the best scientific evidence. Von Kries would say that while alien trappings are nomologically possible, it is illegitimate and deceitful to then state a *quantified* “risk” of an alien trampling.⁷³ This is because whatever “risk” is stated is predicated on an insufficiently corroborated hypothesis (i.e., a hypothesis backed by *assumptions*), rather than on what is *known*. To be sure, self-proclaimed UFO abductees will insist that their personal encounters make alien trappings *known*, not just nomological possibilities. But if courts simply accept anecdotal, improperly selective, or subjective evidence that does not reflect the “best” scientific evidence (or even of opinions advanced by a professed “authority” or “expert”), separation of nomological and epistemic possibilities cannot occur.

Former Harvard Medical School Dean Sydney Burwell succinctly identified the fundamental epistemological problem in assessing what is objectively “known” at any given time when he stated: “My students are dismayed when I say to them, ‘Half of what you are taught as medical students will in 10 years have been shown to be wrong. And the trouble is, none of your teachers knows which half.’”⁷⁴ Burwell’s quote illustrates that finite causality is *tied to a definite moment in time*. At one moment, a relation $A \rightarrow B$ may reflect the best scientific “knowledge,” but not earlier or later. Scientific explanation builds finite causal paths and chains, and then deconstructs⁷⁵ and reconstructs links as compelling

⁷³ Thus, von Kries would disapprove of the Drake Equation, an equation formulated in 1961 that supposedly offers a means of estimating the probability of other intelligent life in the universe. See Steve Ford, *What is the ‘Drake Equation’?*, available at <http://seti1.setileague.org/general/drake.htm> (last updated Jan. 4, 2003) (describing the Drake Equation “factors” included in computing the probability of intelligent alien life).

⁷⁴ G.W. Pickering, *The Purpose of Medical Education*, 2 BRIT. MED. J. 113, 115 (1956).

⁷⁵ Deconstructing finite causal chains in an infinite causal nexus might seem like “proving the negative”—demonstrating that a relation does *not* exist. Strictly speaking, proving the negative is impossible for any infinite set. Nonetheless, because of something that Michael Martin calls the Negative Evidence Principle, we can approximately and objectively “prove” the *absence*, just as we can objectively “prove” the *existence* of a finite causal chain:

A person is justified in believing that X does not exist if (1) all the available evidence used to support the view that X exists is shown to be inadequate; and (2) X is the sort of entity that, if X exists, then there is a presumption that [there] would be evidence adequate to support the view that X exists; and (3) this presumption has not been defeated although serious efforts have been made to do so; and (4) the area where evidence would appear, if there were any, has been comprehensively examined; and (5) there are no acceptable beneficial reasons to believe that X exists.

contradictory or corroboratory evidence is found. We prefer to think scientific explanation is progressive, that the linkages we establish are ever more objective and ever closer to “reality” than before. This need not be so. The Dark Ages, in which anecdotal experience, ungrounded hypotheses, unscientific alchemy, and mythos reigned caused loss of public “knowledge.”⁷⁶ Scientific “explanations” are no less immune to fashion or to fancy than fiction itself if they do not derive from an objective protocol.⁷⁷

Thus, to assign liability, an *objective*, consistent metric for “knowing what we know” at a given time is essential.⁷⁸ Without such, some of the most taken-for-granted “facts” or “risks”—even when advocated by well-regarded authorities⁷⁹—turn out to be nothing more than nomological possibilities.

MICHAEL MARTIN, ATHEISM: A PHILOSOPHICAL JUSTIFICATION 283 (1992). These elements of the Negative Evidence Principle are incorporated into Evidence-Based Logic (EBL), the method for determining epistemic possibility.

⁷⁶ Cf. Michael Minnicino, *The New Dark Age: The Frankfurt School and ‘Political Correctness’*, 1 FIDELIO (1992), available at http://www.schillerinstitute.org/fid/91-96/921_frankfurt.html (contending that “Frankfurt School” of academia, public opinion polls, infotainment, and political correctness are causing a deconstruction of modern culture and scientific knowledge akin to the Dark Ages’ regression).

⁷⁷ See *infra* note 137.

⁷⁸ It is critical that we understand that an epistemic possibility is linked to a specific moment in time. What is epistemic today may tomorrow become nomological because of objectively compelling new evidence that disputes that finite causal path or chain. Conversely, what is nomological today may tomorrow become epistemic because of objectively compelling new evidence that corroborates the nomological (hypothesized) causal relation.

⁷⁹ See Guzelian & Guzelian, *supra* note 34, at 1469 (“Uncritical acceptance of authority-based opinions as conclusive evidence is pervasive, even though top authorities unsuccessfully predict what scientific knowledge will be preserved as ‘fact.’”). Dr. David Sackett explains that reliance on expert medical opinions, which themselves are not based upon an objective methodology, poses a jeopardy of improperly bestowing epistemic status upon nomological possibilities:

For the problems we’re likely to encounter very infrequently ([for example] . . . a man who developed bad pneumonia while trying to reject his heart-lung transplant), we “blindly” seek, accept and apply the recommendations we receive from authorities in the relevant branch of medicine. This “replicating” mode also characterizes the practice of medical students and clinical trainees when they haven’t yet been granted independence and have to carry out the orders of their consultants. The trouble with the “replicating” mode is that it is “blind” to whether the advice received from the experts is authoritative (evidence-based, resulting from their . . . [objective appraisal of evidence consistent with “best evidence” methods]) or merely authoritarian (opinion-based, resulting from pride and prejudice). . . . If we tracked the care we give when operating in the “replicating” mode into the literature and . . . [objectively] appraised it, we would find that some of it was effective, some useless, and some harmful. But in the “replicating” mode we’ll never be sure which.

DAVID L. SACKETT ET AL., EVIDENCE-BASED MEDICINE: HOW TO PRACTICE AND TEACH EBM Intr. 5 (2d ed. 2000). Daniel Friedland and his co-authors compare “traditional” (authority-based) and “evidence-based” assumptions as applied in medicine:

Evidence-based medicine is a movement that has developed to help us make . . . decisions with our patients *systematically*. This movement is represented by a recent profusion of literature and course work in evidence-based medicine, and . . . has been characterized as a paradigm shift.

The traditional medical paradigm comprises four assumptions:

1. Individual clinical experience provides the foundation for diagnosis, treatment, and prognosis. The measure of authority is proportional to the weight of individual experience.
2. Pathophysiology provides the foundation for clinical practice.
3. Traditional medical training and common sense are sufficient to enable a physician to evaluate new tests and treatments.
4. Clinical experience and expertise in a given subject area are a sufficient foundation to enable the physician to develop clinical practice guidelines.

The new evidence-based medicine paradigm comprises a different set of assumptions:

1. When possible, clinicians use information derived from systematic, reproducible, and unbiased studies to increase their confidence in the true prognosis, efficacy of therapy, and usefulness of diagnostic tests.
2. An understanding of pathophysiology is necessary but insufficient for the practice of clinical medicine.
3. An understanding of certain rules of evidence is necessary to evaluate and apply the medical literature effectively.

DANIEL J. FRIEDLAND ET AL., EVIDENCE-BASED MEDICINE: A FRAMEWORK FOR CLINICAL PRACTICE 2 (1998); *see also* George Wright et al., *An Empirical Test of the Relative Validity of Expert and Lay Judgments of Risk*, 22 RISK ANALYSIS 1107, 1118 (2002) (finding that underwriters—risk assessment experts—are little better at estimating certain risk measures than laypersons because of lack of objective feedback); G. Rowe & George Wright, *Expert Systems in Insurance: A Review and Analysis*, 2 INT’L J. INTELLIGENT SYSTEMS IN ACCT., FIN., AND MGMT. 129 (1993) (concluding there is little evidence that experts are more veridical than laymen in risk assessment); *cf.* Paul Slovic et al., *Characterizing Perceived Risk*, in PERILOUS PROGRESS: MANAGING THE HAZARDS OF TECHNOLOGY 91–125 (R.W. Kates et al. eds., 1985) (reaching opposite conclusions, but criticized by Wright et al. (2002) for lack of statistical power and for use of a heterogeneous panel of experts). Observe that courts sometimes reference doctors’ opinions in *exactly* the manner that Sackett finds objectionable; one is not certain whether the physician found the risk to be epistemic on the basis of the evidence, or on his authority alone. *See* *Devlin v. Johns-Manville Corp.*, 495 A.2d 495, 498 (N.J. Super. Ct. Law Div. 1985) (“[T]he fear complained of by plaintiffs, in light of all the facts and circumstances, cannot be deemed to be idiosyncratic or unexpected in ‘normally constituted people.’ Plaintiffs have been told by their doctors of the increased risk and the need for medical surveillance to monitor for potential cancerous developments.”).

Consider, for instance, the dogma in early 19th-century France that phlebotomies (bleeding of patients) cured cholera.⁸⁰ More recently, a generation of well-meaning cardiologists put their postmenopausal patients at risk of cancer and heart disease through estrogen treatments that were widely and incorrectly believed, ironically, to reduce heart disease.⁸¹ Courts too are starting to see the

⁸⁰ Paris clinician Pierre Louis dispelled this belief through systematic examination of patients. See generally PIERRE LOUIS, RECHERCHES SUR LES EFFETS DE LA SAIGNEE DANS QUELQUES MALADIES INFLAMMATOIRES: ET SUR L'ACTION DE L'EMETIQUE ET DES VESICATOIRES DANS LA PNEUMONIE (1836), reprinted by The Classics of Medicine Library, Birmingham, Alabama, 1986.

⁸¹ David Herrington and Timothy Howard tout the newfound realization that this untested hypothesis-turned-dogma could have been easily prevented:

During the past decade, postmenopausal hormone therapy became one of the most frequently prescribed therapies in the United States, with a highly diversified portfolio of presumed benefits for postmenopausal women. The belief that hormone therapy might reduce a woman's risk of coronary heart disease contributed considerably to its widespread use. Beginning in 1998, results from a series of randomized clinical trials, . . . have clearly demonstrated that hormone therapy does not slow the clinical or anatomical progression of established coronary disease, nor does it prevent clinical cardiovascular events in previously healthy women. Indeed, data from the Women's Health Initiative (WHI), in conjunction with data from several other trials with clinical end points, suggest that hormone therapy may even increase cardiovascular risk

The simple and intuitively appealing concept that replacing estrogen lost during menopause would be beneficial was easy for both patients and physicians to believe. This fact, coupled with impressive indirect evidence of a cardioprotective effect and growing awareness of the need for effective means to treat and prevent heart disease in women, made for a nearly unshakable belief in the benefits of hormone therapy. As a result, many people suspended ordinary standards of evidence concerning medical interventions and concluded that hormone therapy was the right thing to prevent heart disease in millions of postmenopausal women—despite the absence of any large-scale clinical trials quantifying its overall risk-benefit ratio.

Not surprisingly, when the initial randomized clinical trials failed to show a cardiovascular benefit, the results were heavily criticized and, in some cases, disregarded in lieu of the less credible evidence that fit the prevailing paradigm

The lesson is that belief, no matter how sincerely held, is no substitute for proof Similarly, observational or mechanistic studies, animal models, and basic research have tremendous value for the generation of hypotheses but should not be used to justify broad-based pharmacologic interventions.

David M. Herrington & Timothy D. Howard, *From Presumed Benefit to Potential Harm—Hormone Therapy and Heart Disease*, 349 NEW ENG. J. MED. 519, 519 (2003); see also Lars Holmberg & Herald Anderson, *HABITS (Hormonal Replacement Therapy for Breast Cancer—Is It Safe?), A Randomised Comparison: Trial Stopped*, LANCET ONLINE (2004) (randomized trials ended because of unacceptable recurrence of breast cancer in women using estrogen therapy), available at <http://image.thelancet.com/extras/03let12260web.pdf>.

need to divide epistemic and nomological possibilities. One federal judge found that the U.S. Environmental Protection Agency, which first promoted the now-accepted dogma that second-hand cigarette smoke causes lung cancer, had no objective basis for that proclamation.⁸² And former Yale and Pennsylvania Law dean and current federal judge Louis Pollak preliminarily concluded only two years ago that there was no objective basis for presenting “evidence” that a murder suspect’s fingerprints were identical to those later taken by authorities, despite a century of fingerprinting’s evidentiary use and a professional requirement that multiple experts examine each pair of prints.⁸³

Thanks to remarkable advances in informatics and database searchability, we can now objectively judge much causal “knowledge” without relying on popular, unfounded, or incompletely founded opinion. This method is referred to as “best evidence” or “evidence-based logic” (“EBL”). Scientific disciplines such as dentistry,⁸⁴ medicine,⁸⁵ engineering,⁸⁶ computer science,⁸⁷ veterinary science,⁸⁸

⁸² *Flue-Cured Tobacco Coop., Stabilization Corp. v. EPA*, 4 F. Supp. 2d 435, 463 (M.D.N.C. 1998) (rejecting EPA “research finding” that second-hand cigarette smoke causes lung cancer for lack of objective evidence).

⁸³ Adrian Cho, *Fingerprinting Doesn’t Hold Up as a Science in Court*, 295 SCIENCE 418 (2002); see also *Exxon Corp. v. Makofski*, 116 S.W.3d 176, 176 (Tex. Ct. App. 2003) (conducting preliminary EBL review to assess whether benzene contamination of aquifer caused plaintiffs’ ailments).

⁸⁴ EVIDENCE-BASED DENTISTRY available at <http://www.nature.com/ebd/> and THE JOURNAL OF EVIDENCE-BASED DENTAL PRACTICE available at <http://www.elsevier.com/locate/jebdp> are new peer-reviewed journals offering research results based on “best evidence” methods.

⁸⁵ See, e.g., KHALID S. KHAN ET AL., SYSTEMATIC REVIEWS TO SUPPORT EVIDENCE-BASED MEDICINE: HOW TO REVIEW AND APPLY FINDINGS OF HEALTHCARE RESEARCH (2003); DAVID L. SACKETT ET AL., EVIDENCE-BASED MEDICINE: HOW TO PRACTICE AND TEACH EBM (2d ed. 2000); DANIEL J. FRIEDLAND ET AL., EVIDENCE-BASED MEDICINE: A FRAMEWORK FOR CLINICAL PRACTICE (1998); N. Howes et al., *Surgical Practice Is Evidence Based*, 84 BRIT. J. SURG. 1220 (1996); David L. Sackett, *Using Evidence-Based Medicine to Help Physicians Keep Up-to-Date*, 9 SERIALS 178 (1997); Evidence-Based Medicine Working Group, *Evidence-Based Medicine: A New Approach to Teaching the Practice of Medicine*, 268 JAMA 2420 (1992); E.M. Antman et al., *A Comparison of Results of Meta-Analyses of Randomised Control Trials and Recommendations of Clinical Experts*, 268 JAMA 240 (1992). Numerous evidence-based medical specialty journals have begun being published, including CANCER TREATMENT REVIEWS available at <http://intl.elsevierhealth.com/journals/ctrv/>; EVIDENCE-BASED COMPLEMENTARY AND ALTERNATIVE MEDICINE available at <http://www3.oup.co.uk/jnls/list/ecam/>; EVIDENCE-BASED HEALTHCARE available at <http://www.harcourt-international.com/journals/ebhc/>; EVIDENCE-BASED CARDIOVASCULAR MEDICINE available at <http://www.harcourt-international.com/journals/ebcm/>; EVIDENCE-BASED NURSING available at <http://ebn.bmjournals.com/>; EVIDENCE-BASED OBSTETRICS & GYNECOLOGY available at <http://www.harcourt-international.com/journals/ebog/>; EVIDENCE-BASED MEDICINE available at <http://ebm.bmjournals.com/>; AMERICAN COLLEGE OF

and businesses such as insurance companies or HMOs⁸⁹ have adopted EBL to gauge what is “known” (i.e., an epistemic possibility) at a particular time. We intend a thorough future presentation on EBL. For now, it suffices to note that EBL exists and is being recognized among scientists of all specialties as the best metric for distinguishing epistemic and nomological possibilities.⁹⁰ The

PHYSICIANS JOURNAL CLUB available at <http://www.acpjc.org/>; EVIDENCE-BASED PRACTICE available at http://www.jfponline.com/service/subscriptions_ebr.asp; TRENDS IN EVIDENCE-BASED NEUROPSYCHIATRY available at <http://www.tenmag.com/index.php3>, etc. The Cochrane Library available at <http://www.cochrane.org/> allows for robust online journal searching across scientific publications that meet “best evidence” standards.

⁸⁶ TECHNOMETRICS: A JOURNAL OF STATISTICS FOR THE PHYSICAL, CHEMICAL AND ENGINEERING SCIENCES, available at <http://www.amstat.org/publications/tech/>

⁸⁷ Eduard Metzker & Harald Reiterer, *Evidence-Based Usability Engineering*, in COMPUTER-AIDED DESIGN OF USER INTERFACES III (Jean Vanderdonckt et al. eds., 2002); Barbara A. Kitchenham et al., *Evidence-Based Software Engineering* (forthcoming presentation at International Conference of Software Engineers 2004); R.L. Glass, *Questioning the Software Engineering Unquestionables*, 20 IEEE SOFTWARE 119 (2003); Barbara A. Kitchenham et al., *Preliminary Guidelines for Empirical Research in Software Engineering*, 28 IEEE TRANS. SOFTW. ENG. 721 (2002).

⁸⁸ P.D. Rosedale et al., *Clinical Evidence: An Avenue to Evidence-Based Medicine*, 35 EQUINE VET J. 634 (2003); C.M. Marr, *Defining the Clinically Relevant Questions That Lead to the Best Evidence: What Is Evidence-Based Medicine?*, 35 EQUINE VET J. 333 (2003); P.D. Rosedale, *Objectivity Versus Subjectivity in Medical Progress*, 35 EQUINE VET J. 331 (2003); T.S. Mair & N.D. Cohen, *A Novel Approach to Epidemiological and Evidence-Based Medicine Studies in Equine Practice*, 35 EQUINE VET J. 339 (2003); K.C. Klotins et al., *Canine Heartworm Testing in Canada: Are We Being Effective?*, 41 CAN. VET. J. 929 (2000); B.W. Keene, *Towards Evidence-Based Veterinary Medicine*, 14 J. VET. INTERN. MED. 118 (2000); T. Roper, *Evidence-Based Medicine*, 5 VET. REC. 644 (1998); B. Fogle, *Evidence-Based Medicine*, 5 VET. REC. 643-44 (1998); G. Malynicz, *Evidence-Based Medicine*, 5 VET. REC. 619 (1998).

⁸⁹ See, e.g., Aetna, *Clinical Policy Bulletins*, available at <http://www.aetna.com/cpb/index.html> (stating Aetna’s corporate use of evidence-based medicine to determine which procedures/treatments are medically “necessary” and therefore remunerable).

⁹⁰ Whether a single method for addressing *general* and *specific* causation can exist is open to the most basic epistemological debates. See Christopher Hitchcock, *Probabilistic Causation* § 6.3, in STANFORD ENCYCLOPEDIA OF PHILOSOPHY (2002), available at <http://plato.stanford.edu/entries/causation-probabilistic/>. Hitchcock cites specific/general causation dichotomy literature and notes that

we make at least two different kinds of causal claim, singular and general. With this distinction in mind, we may note that . . . counterexamples . . . are all formulated in terms of singular causation. So one possible reaction to . . . counterexamples . . . would be to maintain that a probabilistic theory of causation is appropriate for general causation only, and that singular causation requires a distinct philosophical theory. One consequence of

systematic approach of EBL means that identifying causal relationships, including risks, can be achieved with precision and accuracy never achieved under earlier legal standards, such as “falsity” or “misleadingness.”⁹¹

We must pause to note that many regulatory agencies, public advocacy groups, crisis managers, and safety experts advise that certain actions (such as evacuations, waste cleanups, restricted product usage, etc.) be taken even if only a nomological possibility of harm exists. Journalists may be inclined to report on nomological possibilities to the general population.⁹² Such advice and reporting is defended by reference to the *Precautionary Principle*: it is better to be safe than sorry.⁹³ The Precautionary Principle has critics; some say that it encourages wasteful, ad hoc expenditures on uncorroborated “hypotheses about harm” at the

this move is that there are (at least) two distinct species of causal relation, each requiring its own philosophical account—not an altogether happy predicament.

Id.

EBL recognizes this fundamental tension between specific and general causation exists and attempts to resolve both forms of causation adequately, as courts increasingly demand be done. See, e.g., DAVID L. SACKETT ET AL., *EVIDENCE-BASED MEDICINE: HOW TO PRACTICE AND TEACH EBM* 80–87 (2d ed. 2000) (discussing proper protocols for application of EBL to specific patients, in light of patients’ unique attributes); *Eskin v. Carden*, 842 A.2d 1222, 1229–30 (Del. 2004). The court in *Eskin* held that in a case involving a biomechanical expert

[e]xtrapolating from general . . . principles to demonstrative evidence that supports or disproves injury to an individual may not be reliable in every case. We, therefore, hold that a trial judge may admit . . . expert opinion that a particular injury did (or did not) result from the forces of an accident only where the trial judge determines that the testimony reliably creates a connection between the reaction of the human body generally to the forces generated by the accident and the specific individual allegedly injured or another determinative fact in issue

Id.

⁹¹ See Christopher P. Guzelian, *Scientific Truth & The Freedom of Speech: An Essay in Defense of Viewpoint Discrimination* (forthcoming) (contending that much haziness in First Amendment jurisprudence can be ascribed to linguistic confusion).

⁹² This observation should not be taken to mean that communicating nomological possibilities or rare epistemic risks should be wholly disallowed. But the risk communicator must think about how his audience is going to *perceive* the information he presents. If it is a nomological possibility, the audience must perceive it as that, not as an epistemic risk.

⁹³ Volkert Dethlefsen et al., *The Precautionary Principle: Towards Anticipatory Environmental Management*, in *CLEAN PRODUCTION STRATEGIES* 41–62 (Tim Jackson ed., 1993); Commission of the European Communities, *Communication From the Commission on the Precautionary Principle* 3 (2000) (maintaining that some applications of the precautionary principle are valid, but stressing “[r]ecourse to the precautionary principle presupposes that potentially dangerous effects deriving from a phenomenon, product or process have been identified, and that scientific evaluation does not allow the risk to be determined with sufficient certainty”), available at http://europa.eu.int/eur-lex/en/com/cnc/2000/com2000_0001en01.pdf.

expense of efficient resource allocation toward reducing *known* risks.⁹⁴ The debate is an interesting one, but which side has the better of it does not matter for

⁹⁴ Elizabeth Wheelan, president of the American Council on Science and Health, critiques the precautionary principle:

There are . . . at least two reasons why the precautionary principle itself, when applied in its extreme, is a hazard, both to our health and our high standard of living.

First, if we act on all the remote possibilities in identifying causes of human disease, we will have less time, less money and fewer general resources left to deal with the real public health problems which confront us. This does not mean that before we take prudent action to protect public health we have to dot every scientific "i" and cross every environmental "t". It does mean that we should not let the distraction of purely hypothetical threats cause us to lose sight of the known or highly probable ones.

Second, the precautionary principle assumes that no detriment to health or the environment will result from the proposed new banning or chemical regulation. . . .

....

When we apply the precautionary principle and focus on hypothetical risks and ponder what actions we might take "just in case," we leave the world of science and enter the realm of ideology. We allow ourselves to come under the spell of those who are motivated, for whatever reason, by a desire to return to what they perceive as a pre-industrial Garden of Eden.

These "what if" ideologues need to be reminded that wealth and industrial progress are associated with better, not worse health. Blanket applications of the precautionary principle ultimately would mean rejecting the modern technologies that have given us our enviable state of good health and longevity, and the freedom to enjoy it.

Elizabeth M. Whelan, *Can Too Much Safety Be Hazardous? A Critical Look at the "Precautionary Principle,"* AMERICAN COUNCIL ON SCIENCE AND HEALTH (May 23, 2000), available at http://www.acsh.org/healthissues/newsID.236/healthissu_detail.asp; see also THOMAS R. DEGREGORI, *BOUNTIFUL HARVEST: TECHNOLOGY, FOOD SAFETY, AND THE ENVIRONMENT* 122 (2002):

The precautionary principle is often defined as [the view that] 'absence of evidence is not the same as absence of risk.' What this really says is that the proponents of the principle have lost the argument on the evidence (otherwise they would argue the evidence), so they argue that we should follow their policy prescriptions anyway. Stated differently, if our fears and phobias are right, we are right, but even if we are wrong, well, we are still right: it's 'my policy, right or wrong.'

See generally CASS R. SUNSTEIN, *RISK AND REASON: SAFETY, LAW, AND THE ENVIRONMENT* (2002) (arguing that government agencies should predicate regulatory decisions and prioritize expenditures on the basis of sound risk assessments); BJØRN LOMBORG, *THE SKEPTICAL ENVIRONMENTALIST: MEASURING THE REAL STATE OF THE WORLD* (2001) (arguing for evidence-based prioritization of resources toward "real" problems rather than nomological possibilities for global warming); John D. Graham & Susan Hsia, *Europe's Precautionary Principle: Promise and Pitfalls*, 5 J. RISK RESEARCH 371 (2002). Graham and Hsia find the European Community's broad regulatory adoption of the Precautionary Principle unsatisfactory

common law tort liability. Where plaintiffs have a burden of proof to establish causality, only epistemic risks are relevant; the fact that a regulatory agency issued sanctions or took "preventative" action because it is compelled to *by law* does not demonstrate a causal contribution (or lack thereof).⁹⁵

To summarize: A properly identified risk conveys three distinct concepts. It is (1) an epistemic possibility (2) that is expressed as quantified probability/likelihood (3) resulting in a harm (disutility). We will quickly review each element of this definition, just to make sure they are clear to us.

and conclude:

Critical terms need to be defined, the evidentiary hurdles for precaution need to be clarified, and checks and balances against ill-considered application of the principle need to be strengthened. A systematic process of ranking hazards and targeting cost-effective protection opportunities should be implemented by the EC as a counterweight to enactment of precautionary measures on a crisis-by-crisis basis.

Id. at 371.

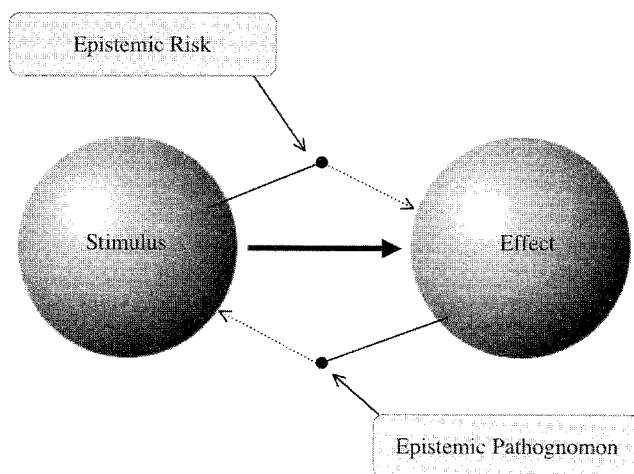
⁹⁵ See Guzelian & Guzelian, *supra* note 34, at 1469 ("It may be prudent for preventative purposes to act as if some chemicals present health risks, but such decisions should never be confused with evidence-based conclusions that such agents do cause harm."). And as Judge Richard Posner has said, "[I]aw lags science; it does not lead it." *Rosen v. Ciba-Geigy Corp.*, 78 F.3d 316, 319 (7th Cir. 1996); *accord* *United States v. Moore*, 846 F.2d 1163, 1167–68 (8th Cir. 1988). In *Moore* the court stated:

[W]e . . . wish to emphasize that the medical evidence in the record was insufficient to establish that AIDS may be transmitted by a bite. The evidence established that there are no well-proven cases of AIDS transmission by way of a bite; that contact with saliva has never been shown to transmit the disease; and that in one case a person who had been deeply bitten by a person with AIDS tested negative several months later. Indeed, a recent study has indicated that saliva actually may contain substances that *protect* the body from AIDS While Dr. Gastineau testified 'in medicine everything is conceivable', *in a legal context the possibility of AIDS transmission by means of a bite is too remote to support a finding that the mouth and teeth may be considered a deadly and dangerous weapon in this respect.*

Id.(emphasis added); *Merrell Dow Pharmaceuticals, Inc. v. Havner*, 953 S.W.2d 706, 727–28 (Tex. 1997) ("Courts should not embrace inferences that good science would not draw. . . . [T]he law should not be hasty to impose liability when scientifically reliable evidence is unavailable."); *Black v. Rhone-Poulenc, Inc.*, 19 F. Supp. 2d 592, 606 (S.D. W.Va. 1998) ("[T]he Court cannot abdicate its role as 'gatekeeper' and subject the jury unfairly to confusing and misleading 'pseudoscientific' research."); *see also* Arnold J. Rosoff, *Evidence-Based Medicine and the Law: The Courts Confront Clinical Practice Guidelines*, 26 J. HEALTH POLITICS, POLICY & LAW 327, 327–30 (2001) (advocating expanded use of evidence-based approach to separate nomological from epistemic possibilities).

Epistemic Possibility. Many people, including those in regulatory agencies, refer to probabilistic estimates of nomological possibilities as “risks.”⁹⁶ Like von Kries, we discourage this linguistic usage. “Nomological possibility,” not “risk,” should describe a hypothesis about a stimulus’s potential to cause harm. Epistemic “risks” are therefore shorthands for stating that epistemic possibility (i.e., $A \rightarrow B$) exists. Precisely defined, a “risk” represents the EBL-corroborated finite causal path extending from stimulus to effect. A close relative to a risk is a “*pathognomon*,”⁹⁷ which represents the proposition that observing an effect B allows EBL-corroborated inference that there is a finite causal relation $A \rightarrow B$. (An aside: in the rest of the paper, we often refer collectively to risks *and* pathognomons as risks because everyday talk does not distinguish the two. Where the difference between the terms is conceptually important, we will flag it.):

Figure 5: Epistemic Risks and Pathognomons: Shorthands for Epistemic Possibility



⁹⁶ Gio B. Gori, *The Costly Illusion of Regulating Unknowable Risks*, 34 REG. TOXICOLOGY & PHARMACOLOGY 205, 206 (2001). Gori notes:

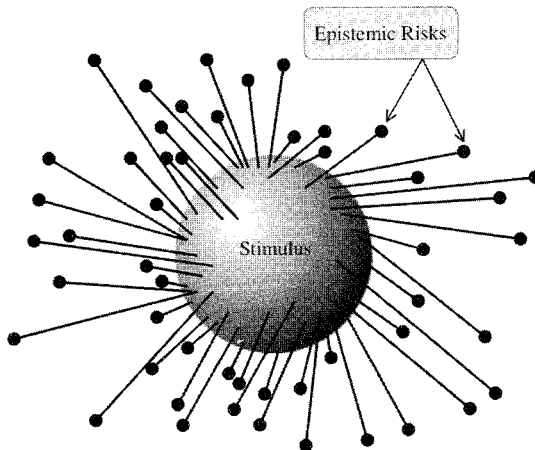
The Environmental Protection Agency’s (EPA) 1986 cancer risk assessment guidelines warned that ‘it should be emphasized that the linearized multistage model [the agency’s default risk assessment model in 1986 and the preferred one to this day] leads to an upper limit to the risk that . . . does not necessarily give a realistic prediction of risk. The true value of the risk is unknown and may be as low as zero.’

Id.

⁹⁷ In medicine, a *pathognomonic* symptom is one that is “characteristic or diagnostic of a particular disease.” WEBSTER’S ENCYCLOPEDIA UNABRIDGED DICTIONARY OF THE ENGLISH LANGUAGE 1057 (1994).

Each stimulus has many epistemic risks associated with it. Each risk indicates the stimulus's capacity to cause a different harmful effect:

Figure 6: Epistemic Risks



An epistemic risk or pathognomon, just like its bedrock epistemic possibility, is established only for a given moment in time. A “risk” may be epistemic at one moment, but mere nomological possibility thereafter, or vice versa.

Quantified Probability. *Statistical* laws, not causality, govern whether a given finite set of elements can *predict* (philosophers sometimes say “*determine*”) certain other elements. Mario Bunge colorfully explains prediction by way of an example, coin tossing:

[F]ar from yielding completely indeterminate, arbitrary, lawless results, coin throwing yields just “heads” and “tails” and this, moreover, in accordance with the definite statistical law stating that, in the long run, the number of “heads” will nearly equal that of “tails” if the coin is well balanced—whereas if tossing a coin produced at times “heads” and other times elephants, newspapers, dreams, or any other objects in an arbitrary lawless way, with no connection at all with the antecedent conditions, then it would be an indeterminate process.⁹⁸

Prediction is achieved by calculating *probabilities (likelihoods)*. Any element in the universe has an *unconditional* probability of existing.⁹⁹ Further, two *conditional* probabilities are associated with any *pair* of elements, *A* and *B*.¹⁰⁰

⁹⁸ BUNGE, *supra* note 52, at 13.

⁹⁹ For example, our fifth scenario at the beginning of this section—“the probability of death”—is an unconditional probability. A slight modification in the question being asked

The first conditional probability associated with *A* and *B* (we are assuming *A*'s existence always precedes *B*'s)¹⁰¹ answers the question, "given an observation that element *A* has occurred, what is the probability (i.e., prediction) that a *subsequent* element *B* will arise?"¹⁰² This probability form is useful when *A*'s existence is known, but not a subsequent element *B*'s. The second conditional probability answers the question, "given an observation that element *B* has occurred, what is the probability (i.e., prediction) element *A* already occurred?" This form is useful for prediction of element *A* when the existence of a later-occurring element *B* is known.

Risks take the first probability form (knowing about a stimulus, we can predict the likelihood of a *harm*¹⁰³) and *pathognomons* follow the second form (knowing about a *harm*, we can predict the likelihood of a *stimulus*). Thus, a *risk* of 0.25 (25%) tells us that, *on average*,¹⁰⁴ for every four times a stimulus *A* already exists in a certain context, an effect *B* will occur once. Similarly, a pathognomon of 0.25 would mean, on average, that if *B* is observed four times, *A* has already existed once (think of it as a risk-in-reverse).

could convert the question to a conditional probability—for instance, "what is the probability of death, given the individual has stomach cancer?"

¹⁰⁰ A conditional probability states the likelihood of an element's occurrence or existence, given the existence or occurrence of some other element.

¹⁰¹ Because time only moves forward, risks are better understood than are pathognomons, because risks require knowledge of the cause's existence to make a prediction of the later effect's occurrence. Of course, causality need not always be forward-progressing in time, although that assumption is often made. For instance, a tax deadline "causes" us to fill out tax forms before it, yet the stimulus (the deadline) is subsequent to the effect (completing the tax form). The reason that causality usually is linked to one direction in time is that a condition of *asymmetry* is imposed on causal relationships; if *A* causes *B*, it is assumed typically that *B* does not also cause *A*. The interested reader can find an extended discussion of this topic in DANIEL HAUSMAN, *CAUSAL ASYMMETRIES* (1998).

¹⁰² Risk is stated symbolically as $P(B/A)$.

¹⁰³ This conditional probability form, $P(B/A)$, does not *have* to be a "risk." *Hopes*, for instance, are of the same probabilistic form, but we specifically view the effect as *positive and desirable*. Whether $P(B/A)$ is a "risk" or "hope" is a normative value judgment. Because we only deal with fears (and thus with risks) in this paper, we have no hope of discussing hopes. Cf. WILLIAM SHAKESPEARE, *HAMLET* act II, sc. 2., 250 (Harold Jenkins ed., Methuen & Co. 1982) ("[T]here is nothing either good or bad but thinking makes it so.").

¹⁰⁴ "On average" means as the number of times *A* occurs becomes very large, the frequency that *B* will occur too converges to the predicted "average" frequency. This conclusion stems from statistics' "Law of Large Numbers": in repeated, independent trials with the same probability *p* of success in each trial, the chance that the percentage of successes differs from the probability *p* by more than a fixed positive amount, $e > 0$, converges to zero as the number of trials *n* goes to infinity, for every positive *e*.

The number of epistemically possible outcomes associated with a stimulus can be staggeringly large. That is why we invoke probabilities (which only quantify the frequency of an *association*) to describe risks (which are objectively known *causal* relationships). Although association is not causation, probabilities help us decipher *which* stimuli and effects are important for a particular inquiry. They whittle down the scope of our search for causes or effects in a given setting, and permit prioritized risk management and efficient decision making about which risks to mitigate or avoid first.¹⁰⁵ But we caution again that just because alleged “risks” (or “pathognomons”) fit these conditional probability *forms* does not mean causality has been satisfactorily established. Probabilities do *not* prove Laplacian causality.¹⁰⁶ And, without EBL, quantifying probabilities about “risks” or “pathognomons” often gives rise to misleading inferences about finite causality, too.

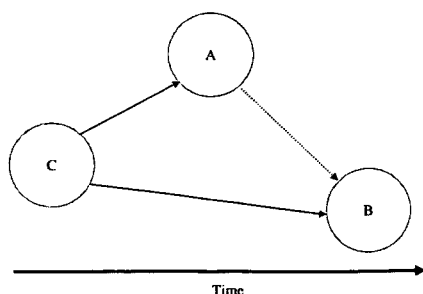
Disutility. The word “risk” invokes a subjective value judgment that an effect *B* in an $A \rightarrow B$ pairing is a *harm* (e.g., injury from a shark attack would be

¹⁰⁵ A quantified probability associated with a risk (e.g., 0.4, or 0.56, or 1) may or may not be *stationary* over time. If the total number of possible causes of effect *B* expands or contracts over time, then the statistical likelihood that a finite set of stimuli $\{A\}$ has caused effect *B* will be *nonstationary*. See WALTER ENDERS, APPLIED ECONOMETRIC TIME SERIES 68–77 (1995). Nonstationary probabilities must be taken into account and controlled for an ongoing risk assessment or management. *Id.*

¹⁰⁶ To see that prediction and Laplacian causality are different, assume there are two elements, *A* and *B*, where *A* is somehow known to always precede *B*, but it is unknown whether *A* causes *B* ($A \rightarrow B$). Say both the risk and pathognomon are unity: $P(A/B) = P(B/A) = 1$. It is possible to render a causal chain where *A* perfectly predicts for *B*, yet no causal path, $A \rightarrow B$, exists. Imagine in reality (although it is unknown to mankind) that an element *C* causes both *A* and *B*, with effect *A* arising before effect *B*. *A* is not a cause of *B*, but is a perfect predictor for it. The well-worn maxim “association does not prove causation” is absolutely correct, speaking as a Laplacian:

A predicts perfectly for *B*, but is not a finite cause of *B*

Figure 7



considered by most to be a “risk” of swimming in the ocean).¹⁰⁷ Law recognizes only fears of “serious injury or death.”¹⁰⁸ This rule limits the range of legally cognizable harms to the most serious. While fear of death by torture surely affords greater disutility than fear of dying suddenly while asleep, our simplifying assumption in this paper is that the *disutility* of anticipated harm is the same for all legally cognizable fears.¹⁰⁹ (Technically, we should talk in terms of expected utility (“utils”)—the product of the disutility’s magnitude times the likelihood of that harm—but we believe discussing risk frequencies will make our subsequent discussions more accessible to our readers.)

C. Risk Perception = Fear

Now that we know which risks are objectively verifiable, let’s return to thinking about fear, which stems from *perceiving* “risks.” Currently, courts assign

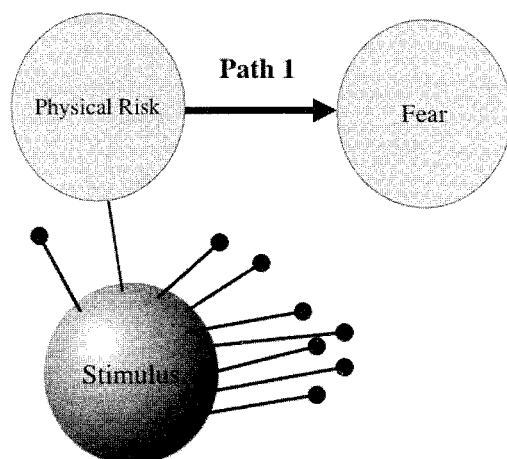
¹⁰⁷ What exactly constitutes an effect/harm *B* is not always clear. The number of unwanted effects (what we term risk “*density*”) created by a given stimulus varies with different acts. Density is sometimes an issue that is important in tort law. For example, in one case defendants’ failure to clean a barge’s hold caused accumulation of explosive gases. *Johnson v. Kosmos Portland Cement Co.*, 64 F.2d 193, 194 (6th Cir. 1933). Lightning struck the barge, it exploded, and two men died. The court, faced with an issue of deciding *what* the risk of harm was before it could find liability, chose to classify the risk broadly as “some intervening incendiary force.” *Id.* at 196–97. However, it could have framed the question much more narrowly as “the risk of lightning strike.” Deciding how broadly to classify these liability-fixing attributes is in turn a function of how “dense” the stimulus’s attribute field is. *Accord id.* at 196 (“The particular consequences of negligence are almost invariably surprises. It is the unexpected rather than the expected that happens in the great majority of the cases of negligence. It is not necessary [for liability to attach] that injury in the precise form in which it in fact resulted should have been foreseen.”) (citations omitted); *Stodola v. Grunwald Mechanical Contractors, Inc.*, 422 N.W.2d 341, 344 (Neb. 1988) (“The law does not require precision in foreseeing the exact hazard or consequence which happens. It is sufficient if what occurs is one of the kind of consequences which might reasonably be foreseen” (quoting *Brown v. Nebraska* 306 N.W.2d 167, 171 (Neb. 1981))). While these concepts of correctly framing the risk density or identifying the scope of the harm are potentially quite important, we reserve their treatment for a different day. A recent comment by John Goldberg offers a good starting point for consideration of the issue. See John C.P. Goldberg, *Rethinking Injury and Proximate Cause*, 40 SAN DIEGO L. REV. 1315, 1336–41 (2003) (contending the commonness of risks associated with an act, the malicious intent of the tortfeasor, or the frailty of the victim may cause the court to find a “wronging,” where simple risk deterrence theory might not predict liability).

¹⁰⁸ See *infra* notes 158–59 and accompanying text.

¹⁰⁹ Economists refer to harms as “disutilities”; calculating disutilities allows quantification and ordinal ranking of an individual’s (risk) aversions. For background reading, consult the utility theory or consumer behavior section of a microeconomics textbook such as HAL R. VARIAN, *MICROECONOMIC ANALYSIS* (3d ed. 1992).

all emotional harm liability to those who create or contribute to epistemic risks of physical harm (“*physical injurers*”):

Figure 8: Courts’ Present Conception of How Fear Occurs



The problem is fear causality is not as simple as Figure 8. Without sufficient *perception* of a risk, a person cannot fear it.¹¹⁰ This is one of THE fundamental concepts of this article, and courts all too frequently have overlooked or mishandled risk perception’s central relation to fear.¹¹¹ As sociologist Kenneth Ferraro observes: “To produce a fear reaction in humans, a recognition of a situation as possessing at least potential danger, real or imagined, is necessary. This conception of potential danger is what we may call perceived risk and is clearly defined by the actor in association with others.”¹¹²

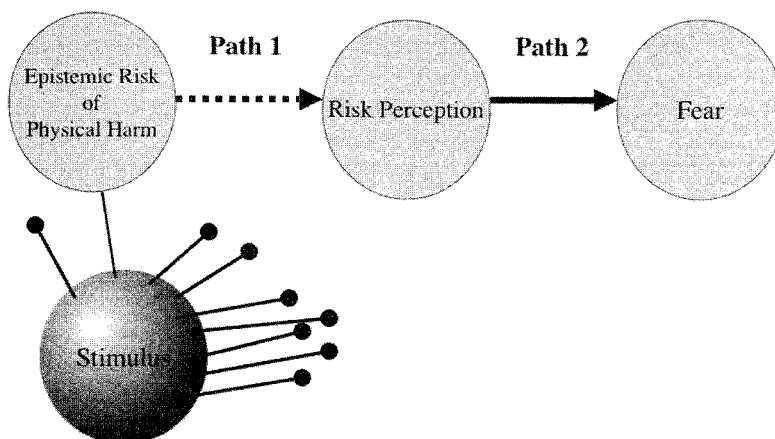
¹¹⁰ GAVIN DE BECKER, FEAR LESS: REAL TRUTH ABOUT RISK, SAFETY, AND SECURITY IN A TIME OF TERRORISM 41 (2003) (“True fear . . . is always based upon something we perceive, something in our environment or our circumstance.”); *Metro North v. Buckley*, 521 U.S. 424, 435 (1997) (noting that risks may arise or may increase “without causing serious emotional distress”); *Bird v. Saenz*, 51 P.3d 324, 330 (Cal. 2002) (fear claim denied because “[an] understanding perception of the injury-causing event is essential, and if [the risk of physical harm] cannot be perceived, recovery cannot be allowed,” (quoting *Meighan v. Shore*, 40 Cal. Rptr. 2d 744, 756 (1995))); *Lawson v. Management Activities, Inc.*, 81 Cal. Rptr. 2d 745, 754 n.14 (Cal. Ct. App. 1999) (“[A]n employee sitting in an isolated and soundproof conference room might have been wholly oblivious to the impending crash [of the airplane]. For those who became aware of the impending crash, the shock value depended on the *brain* to interpret certain stimuli as possible impending death.”).

¹¹¹ See *infra* Part III.D.

¹¹² KENNETH F. FERRARO, FEAR OF CRIME 4 (1995).

So because there is no fear without risk perception,¹¹³ we must make risk perception the “central clearing house” in any causal chain of fear:

Figure 9: A Better Model of Fear’s Causation



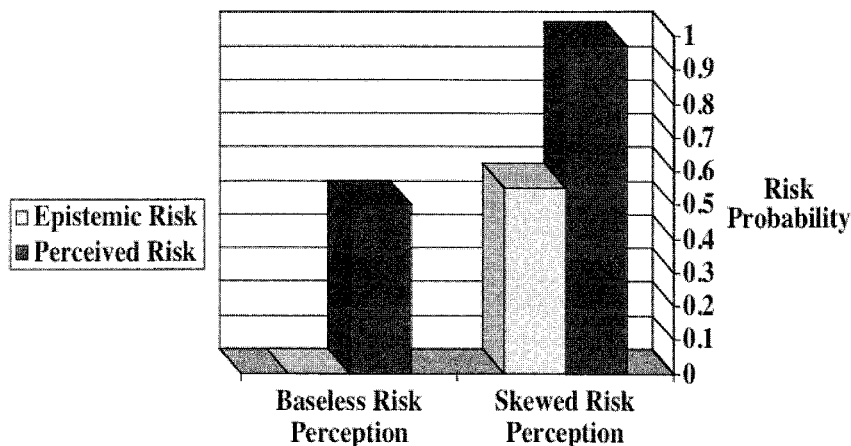
Observe that causal Path 1 in Figure 9 is *dotted*. This is because physical risks caused by a physical injurer—even if resulting in physical harm—do not always lead to *fear*. Indeed, *excessive fear*—fear not commensurate with the physical risk one actually faces—occurs where either: (1) risk perception is upwardly *skewed*¹¹⁴ (an epistemic physical risk exists, but it is lower than the perceived risk), or, (2) in the extreme, risk perception is *baseless* (the “risk” prompting the risk perception is only a hypothesis or fantasy, that is, a nomological possibility):¹¹⁵

¹¹³ Of course, like any finite causal chain, Figure 9 is a quasi-fiction. Path 2 *will* indubitably fail under some circumstances. For instance, it is possible to induce fear in people simply through electric stimulation of appropriate parts of the brain—this “fear” does not depend on risk perception. See Boulos-Paul Bejjani et al., *Transient Acute Depression Induced by High Frequency Deep-Brain Stimulation*, 340 NEW ENG. J. MED. 1476, 1476 (1999) (finding that continuous high-frequency stimulation to the left substantia nigra induced major, reversible depression in a patient). But what we are saying is that in a *legal setting*, the fear causality model that will be widely and typically confirmed as the best general model of causality includes risk perception.

¹¹⁴ We may occasionally use “misleading,” “erroneous,” “unjustified,” or other comparable terms as synonyms for “skewed” risk perception in this article. The concept remains the same.

¹¹⁵ *Downwardly* skewed risk perception is also possible. See *infra* note 143 and accompanying text.

Figure 10: Examples of Baseless and Upwardly Skewed Risk Perception



A classic example of baseless risk perception is Orson Welles's 1938 radio rendition of *War of the Worlds*,¹¹⁶ which portrayed a "live" Martian invasion of Earth and sent millions into senseless but heart-stopping panic overnight.¹¹⁷ In 1938, the best scientific evidence indicated the "risk" of Martian invasion was mere conjecture;¹¹⁸ in fact, the best scientific evidence in 1900 indicated this

¹¹⁶ See generally HOWARD KOCH, *THE PANIC BROADCAST: PORTRAIT OF AN EVENT* (1970) (recounting the historical Welles broadcast).

¹¹⁷ Psychologist Hadley Cantril described the broadcast's results:

For a few horrible hours people from Maine to California thought that hideous monsters armed with death rays were destroying all armed resistance sent against them; that there was simply no escape from disaster; that the end of the world was near. Newspapers the following morning spoke of the "tidal wave of terror that swept the nation." It was clear that a panic of national proportions had occurred. The chairman of the Federal Communications Commission called the program "regrettable."

HADLEY CANTRIL, *THE INVASION FROM MARS: A STUDY IN THE PSYCHOLOGY OF PANIC* 3 (1966). Investigators estimated 28% of the listening audience believed the broadcast was a genuine news bulletin. Of those, 70% (approximately 1,200,000 people) became panicked or hysterical. *Id.* at 58.

¹¹⁸ See generally ALFRED R. WALLACE, *IS MARS HABITABLE?* (1907) (contending temperature on Mars is almost certainly below water's freezing point and that the polar "ice" caps are likely made of carbon dioxide); W.W. Campbell, *Water Vapor in the Atmosphere of the Planet Mars*, 30 *SCIENCE* 474, 475 (1909) (conducting evaporative experiment to conclude that "any [Martian] water vapor . . . must have been much less extensive than was contained in the rarefied and dry air strata above Mount Whitney"); Walter S. Adams & Theodore Dunham, *The B Band of Oxygen in the Spectrum of Mars*, 79 *ASTROPHYSICAL J.* 308, 308 (1934) (finding no oxygen in Martian atmosphere using spectral analysis); *Water-Vapor Lines in the Spectrum*

too.¹¹⁹ Yet often only experts can adequately determine epistemic risks. The best evidence about the existence (or absence) of intelligent Martians is generated by astronomers, astrophysicists, biologists, and so forth. Lawyers and rodeo clowns have few (if any) skills that would be relevant to accruing or corroborating knowledge about intelligent Martian life. Yet lawyers and rodeo clowns would presumably be as inconveniently affected by a Martian invasion as astrophysicists would be. This makes for a critical insight: There is a growing divide between the *ability* and the *desire* or *need* to independently perceive epistemic risks.¹²⁰

of Mars, 49 PUB. ASTRONOMICAL SOCIETY PACIFIC 209, 211 (1937) (confirming by spectral analysis no water vapor in Martian atmosphere).

Even turn-of-the-century Mars astronomers had not suggested that intelligent beings inhabited Mars. Scientists in the 1890s and 1900s had merely claimed to see “canals” and other unusual geographic features on the Red Planet. But there was little serious consideration that intelligent life could exist on Mars; early scientists ascribed these formations to natural geological change. See, e.g., GIOVANNI SCHIAPARELLI, *THE ROTATION AND PHYSICAL CONSTITUTION OF THE PLANET MERCURY AND THE PLANET MARS* 9 (1900) *available at* <http://home.att.net/~a.caimi/Schiaparelli.html>. (speculating that organic life “may be diffused over the surface of the planet [Mars]”, but tempering this assertion by noting: “*It is not necessary to suppose them [the canals] the work of intelligent beings . . . we are now inclined to believe them to be produced by the evolution of the planet, just as on the earth we have the English Channel and the channel of Mozambique.*”) (emphasis added).

¹¹⁹ Something we are hinting at in this Orson Welles case study is that *what* people fear is a product of a specific era and culture:

Chemically speaking, fear is close to curiosity—hence many so-called terrors have an eerie attraction. That is why fear can be marketed as entertainment. We start out by being afraid of things—spiders, ghosts, thunderstorms and volcanoes—and end up being immensely well-informed about them Take leprosy as an example. This disease loomed as an awful possibility throughout the early medieval period. The primal response was an authentic fear; then, as conditions improved, the threat lessened, but there remained a powerful lingering superstition concerning the curative power of leper’s blood. When leprosy became a rare, almost exotic, condition in Western Europe, it started to be employed as a literary device, to add a frisson or pleasurable shiver to a story Finally, when the dreadful affliction became so distanced and so remote, it was recycled as pure farce in buffoonesque comedies

PAUL NEWMAN, *A HISTORY OF TERROR: FEAR & DREAD THROUGH THE AGES* xiv–xv (2000). Because understandings about “new” risks are constantly updating or changing (see *supra* Part II.B), we should not be surprised that fear, which often derives from comprehension or uncertainty about “risks,” waxes and wanes over time too.

¹²⁰ See JOHN F. ROSS, *THE POLAR BEAR STRATEGY: REFLECTIONS ON RISK IN MODERN LIFE* (1999) (contending a disjunction exists between experts and average Americans: experts try to rank risks rationally, while laymen respond more intuitively and emotionally); JOHN C. CHICKEN & TAMAR POSNER, *THE PHILOSOPHY OF RISK* 9 (1998) (“In the simplest sense, knowledge is the sum of what is known—either theoretically or in practice. At any one time a person’s stock of knowledge is finite It is the fact that there are very great differences in the distribution of knowledge throughout the population that . . . gives rise to misunderstandings

As we will see next, *risk communication*—the process of shaping people’s perceptions of dangers they have not personally experienced—is the means for bridging this divide.

D. Risk Communication: The Major Modern Cause of Fear

Fear conditioning—the neurological process by which fears arise¹²¹—occurs in two ways. The first is by *personally* encountering a stimulus that one perceives (accurately or inaccurately¹²²) to present a risk of harm: a doctor sticks a patient with a needle he hides in his hand (a *directly* experienced event); she later refuses to shake his hand (a conditioned response to a fearful stimulus—the physician’s

about the significance of risks.”); HADLEY CANTRIL, *THE INVASION FROM MARS: A STUDY IN THE PSYCHOLOGY OF PANIC* 112–24 (1940) (observing that individual’s education is the single major determinative predictor of whether individuals were aroused or whether they became fearful during the *War of the Worlds* broadcast); *Bird v. Saenz*, 51 P.3d 324, 329 (Cal. 2002). The court in *Bird* denied NIED liability sought by lay observers of procedure against negligent doctor. The court noted:

[C]ourts have not found a layperson’s observation of medical procedures to [be generally perceptive]. This is not to say that a layperson can never perceive medical negligence, or that one who does perceive it cannot assert a valid claim for NIED. To suggest an extreme example, a layperson who watched as a relative’s sound limb was amputated by mistake might well have a valid claim for NIED against the surgeon. Such an accident, and its injury-causing effects, would not lie beyond the plaintiff’s understanding awareness. But the same cannot be assumed of medical malpractice generally.

Id.

¹²¹ Space limitations prevent me from offering an adequate scientific overview of how fear conditioning works. The interested reader may contact me to receive a summary or can see generally, JOSEPH LEDOUX, *THE EMOTIONAL BRAIN* (1996) (describing neurological mechanisms by which fear is caused).

¹²² Just because one can perceive a risk without any third party influence does not mean that perceived risk is a correct representation of epistemic risk. The so-called “proximity heuristic” (or “availability heuristic”)—past personal experience with an epistemic risk—can distort the accuracy of one’s assessment of the actual epistemic risk. See, e.g., Daniel Kahneman, *Objective Happiness*, in *WELL-BEING: THE FOUNDATIONS OF HEDONIC PSYCHOLOGY* 4–5 (Daniel Kahneman et al. eds., 1999) (describing how colonoscopy patients with scope left inserted for an extra minute, but held motionless, judged colonoscopy procedure to be less unpleasant than those who had scope removed immediately after procedure concluded); Amos Tversky & Daniel Kahneman, *Judgment Under Uncertainty: Heuristics and Biases*, in *JUDGMENT UNDER UNCERTAINTY: HEURISTICS AND BIASES* 3 (Daniel Kahneman et al. eds., 1982); Jerome P. Kassirer & R.I. Kopelman, *Cognitive Errors in Diagnosis: Instantiation, Classification, and Consequences*, 86 AM. J. MED. 433, 433 (1989).

proffered handshake).¹²³ The second way is by *indirect* risk perception: a person is conditioned to perceive a stimulus as a danger, *not* by personal confrontation with that stimulus, *but rather by being informed by another who portrays, accurately or inaccurately, ostensible "risks" associated with that stimulus.*

Risk communication that directly or suggestively links a neutral stimulus to an already feared stimulus causes the neutral stimulus to also be feared. Indeed, emotionally charged communication is better remembered than communication that does not contain such elements.¹²⁴ A risk communicator does not have to *actively* communicate to create fear; passive observation of his actions is often sufficient.¹²⁵ Anthropologic studies have revealed remarkable cross-cultural uniformity in recognition of fearful facial and visual expressions.¹²⁶ For that

¹²³ Betsy A. Tobias et al., *Emotion and Implicit Memory*, in THE HANDBOOK OF EMOTION AND MEMORY: RESEARCH AND THEORY 69 (Sven-Åke Christianson ed., 1992) (listing numerous amnesic studies reaching similar results); *see also* Arne Öhman, *Fear and Anxiety as Emotional Phenomena: Clinical, Phenomenological, Evolutionary Perspectives, and Information-Processing Mechanisms*, in HANDBOOK OF THE EMOTIONS 511–36 (M. Lewis & J.M. Haviland eds., 1992) (conducting “backwards masking” experiments in which emotionally-charged photos were flashed on a screen too quickly to be consciously perceived, then cognitively “blocked” by longer-depicted neutral photos and finding that study participants *did* perceive the emotional photos nonetheless).

¹²⁴ For example, scientists in one study presented two groups with a slide show accompanied by a neutral or emotional narrative. Each show had the same neutral beginning, but one show’s subsequent slides and narrative were traumatic (each show concluded with neutral slides to control recall bias). The group watching the emotional slide show had significantly better memory of central information and details than the control group, *but only for the emotional parts of the slide show*. Larry Cahill et al., *Beta-adrenergic Activation and Memory for Emotional Events*, 371 NATURE 702, 702 (1994).

¹²⁵ Cohen has observed that certain forms of pathological human anxiety are conditioned responses fostered primarily by social observation rather than active communication. *See generally* N.J. COHEN, NEUROPSYCHOLOGICAL EVIDENCE FOR A DISTINCTION BETWEEN PROCEDURAL AND DECLARATIVE KNOWLEDGE IN HUMAN MEMORY AND AMNESIA (1980); N.J. Cohen & L. Squire, *Preserved Learning and Retention of Pattern-Analyzing Skill in Amnesia: Dissociation of Knowing How and Knowing That*, 210 SCIENCE 207 (1980); N.J. Cohen & S. Corkin, *The Amnesic Patient H.M.: Learning and Retention of Cognitive Skills*, 7 SOC’Y NEUROSCIENCE ABSTRACTS 235, 235 (1981).

¹²⁶ Paul Ekman, *Facial Expressions*, in HANDBOOK OF COGNITION AND EMOTION 301, 301–20 (Tim Dalgeish & Mick J. Power eds., 1999) (finding the majority of study subjects correctly recognized fearful facial displays in 19 out of 21 countries). This uniformity is largely attributable to *biological* mechanisms, not environmental influences. The amygdala is responsible for *visual* capability. *See* J.S. Morris et al., *A Neuromodulatory Role for the Human Amygdala in Processing Emotional Facial Expressions*, 121 BRAIN 47, 47 (1998). Fear conditioning through *smell* is attributable to functions of the amygdala and perirhinal cortex (another brain region). Tim Otto et al., *Behavioral and Neuropsychological Foundations of Olfactory Fear Conditioning*, 110 BEHAV. BRAIN RES. 119 (2000). The amygdala and the

matter, risk communication need only foster *subconscious* risk perception to be effective in creating emotional memories and causing fear.¹²⁷ And it makes little difference whether emotional cues are experienced “live” or rebroadcast—each form of risk perception is capable of causing fear.¹²⁸ Risk communication causes

hippocampus (yet another brain region) appear to jointly control *auditory* recognition of fearful voices. S.K. Scott et al., *Impaired Auditory Recognition of Fear and Anger Following Bilateral Amygdala Lesions*, 385 NATURE 254, 254 (1997); F. Ghika-Schmid et al., *Bihippocampal Damage with Emotional Dysfunction: Impaired Auditory Recognition of Fear*, 38 EURO. NEUROLOGY. 276, 276 (1997) (finding impairment of vocal perception of fear, but not other emotions, in patient with hippocampal damage).

¹²⁷ In one notable experiment, amnesics were shown two photographed faces and simultaneously given fictional biographical information about the faces, such that one individual was represented positively, the other negatively. Seventy-eight percent of amnesics, when prompted to state whom they preferred, selected the “good guy,” even though unlike the control group, the amnesics could not justify their preferences. M.K. Johnson et al., *Do Alcoholic Korsakoff's Syndrome Patients Acquire Affective Reactions?*, 11 J. EXPERIMENTAL PSYCHOL.: LEARNING, MEMORY & COGNITION 22, 22 (1985). More recently, a remarkable study demonstrates that while normal people exhibit significantly greater faculty in remembering encounters with aversive verbal stimuli (e.g., the word “rape”) than neutral stimuli (e.g., the word “house”), individuals with damage to the left amygdala (a part of the subconscious brain central in controlling emotionally charged memories) do not have this same heightened capacity to recall emotion-laden terms. Adam K. Anderson & Elizabeth A. Phelps, *Lesions of the Human Amygdala Impair Enhanced Perception of Emotionally Salient Events*, 411 NATURE 305, 305 (2001); see also S.T. Murphy & Robert B. Lajonc, *Affect, Cognition, and Awareness: Affective Priming with Optimal and Suboptimal Stimulus Exposures*, 64 J. PERSON. SOC. PSYCH. 723, 723 (1993) (finding that millisecond-long encounters with negative or positive stimuli can produce non-specific emotional reactions to unrelated stimuli, and that longer exposures on the order of seconds produce emotional reactions only to the relevant trigger stimuli).

¹²⁸ See Michael Cook & Susan Mineka, *Observational Conditioning of Fear to Fear-Relevant Versus Fear-Irrelevant Stimuli in Rhesus Monkeys*, 98 J. ABNORMAL PSYCHOL. 448, 448 (1989) (rhesus monkeys observing videotapes of other monkeys’ fearful responses to certain objects easily acquire fears of those objects); see also Roger E. Kasperson et al., *Stigma and the Social Amplification of Risk: Toward a Framework of Analysis*, in RISK, MEDIA, AND STIGMA: UNDERSTANDING PUBLIC CHALLENGES TO MODERN SCIENCE AND TECHNOLOGY 12 (James Flynn et al. eds. 2001) (“Secondary accounts or media coverage will often be principal sources of image formation.”); Lynn J. Frewer et al., *The Media and Genetically Modified Foods: Evidence in Support of Social Amplification of Risk*, 22 RISK ANALYSIS 701, 701 (2002) (finding public perceptions—particularly negative ones—are easily influenced by media reporting); Mark A. Schuster et al., *A National Survey of Stress Reactions After the September 11, 2001, Terrorist Attacks*, 345 NEW ENG. J. MED. 1507, 1509–10 (2001) (finding correlation between “substantial” stress symptoms after terrorism attacks and study subjects’ length of television news viewership); Paul Slovic et al., *Violence Risk Assessment and Risk Communication: The Effects of Using Actual Cases, Providing Instruction, and Employing Probability Versus Frequency Formats*, 24 LAW & HUM. BEHAV. 271 (2000) (finding that easy access to disturbing images greatly increases concern about risk, even holding true risk

fear as effectively as does personal experience, meaning it *should be* (but is not usually) accounted for in *bystander* fear litigation, where a plaintiff is not at immediate physical risk, but is conditioned to recognize—rightly or wrongly—a *potential* to *personally* suffer that risk.¹²⁹

Law too is gradually recognizing the ability of communication to cause fear—that neutral stimuli, when associated over sufficient time with heinous violence, can become feared stimuli that *by themselves* can terrorize. For instance, the Supreme Court recently upheld a statute making cross-burning with intent to intimidate a felony, despite spirited First Amendment protestations.¹³⁰

Thus Figure 9, perhaps the best causal chain for fears deriving from *personally experienced* mishaps, is not the best causal chain for *communication-spawned* fears. A modification rectifies this:¹³¹

constant); Lisa Goldman & Stanton Glantz, *Evaluation of Antismoking Advertising Campaigns*, 279 J. AM. MED. ASS'N 772, 772–77 (1998) (discussing graphic tobacco ads used to curb smoking); Susan J. Diem et al., *Cardiopulmonary Resuscitation on Television*, 334 NEW ENG. J. MED. 1578, 1578 (1996) (concluding that the public has a skewed perception of CPR's efficacy or applicability in treating cardiac arrest as a result of popular television shows); Roger E. Kasperson et al., *The Social Amplification of Risk: A Conceptual Framework*, 8 RISK ANALYSIS 177 (1988) (classic article proposing a model of how mass risk communication causes certain hazards to gain widespread stigma and causes mass fear, avoidant behavior, and other socially undesired outcomes); George Gerbner & Larry Gross, *Living with Television: The Violence Profile*, 26 J. COMM. 173, 193–94 (1976) (classic study concluding relationship exists between skewed perception of rampant crime and television watching).

¹²⁹ Thus, watching a terrorist strike on television through multiple camera angles and with zoom capacity can be as horrifying—perhaps even more so—than actually witnessing it live. Schuster et al., 345 NEW ENG. J. MED. 1507, 1510 (2001). *See generally infra* Part III.D.

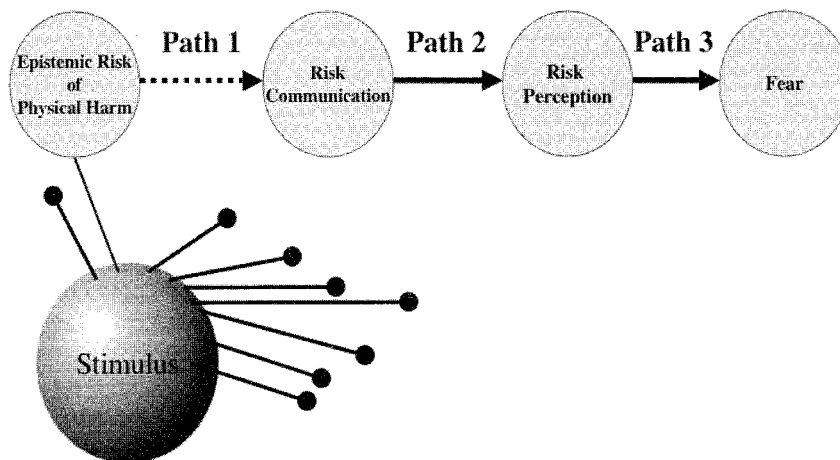
¹³⁰ *Virginia v. Black*, 538 U.S. 343, 363 (2003). The Court in *Black* stated that

[t]he First Amendment permits Virginia to outlaw cross burnings done with the intent to intimidate because burning a cross is a particularly virulent form of intimidation. Instead of prohibiting all intimidating messages, Virginia may choose to regulate this subset of intimidating messages in light of cross burning's long and pernicious history as a signal of impending violence.

Id. In light of Court precedent, *Black* appears to turn largely on the fact that the stimulus (a burning cross) will result in *fear*, not the simple fact that *violence* occurs. *Cf.* *Texas v. Johnson*, 491 U.S. 397, 409 (1989) (striking down flag-burning ban, holding: "It would be odd indeed to conclude . . . that the government may ban the expression of certain disagreeable ideas on the unsupported presumption that their very disagreeableness will provoke violence.") (citation omitted).

¹³¹ Observe in Figure 11 that epistemic risks of physical injury still are represented only with a dotted causal path. This is because no underlying physical risk need exist for risk communication to cause baseless fear.

Figure 11: The Causation of Communication-Spawnd Fear



Risk communication has become *the* major source of Americans' risk perceptions. Instantaneous mass communication is new. Never in history has it been possible to inform so many people, so quickly and so uniformly. Yet in the short time that technology has permitted it, this mode of communication has become the most prevalent means of creating risk perceptions.¹³² Sociologist David Altheide, following a line of distinguished culturalists including Ben Bagdikian, Lawrence Lessig, Noam Chomsky, and Barry Glassner, argues experience and risk knowledge are now absorbed predominantly through these mass communications interfaces, rather than directly and personally:

[C. Wright] Mills . . . urged sociologists to distinguish between personal troubles and social issues. The great Mills was not wrong. He just lived in a period dominated more by print than electronics. Everyday life is increasingly mediated by information technology as we experience events in an ecology of communication. Information technology and its varied communication formats ("media logic") are part of our "effective environment" which we become

¹³² See Paul Slovic, *Perception of Risk*, 236 SCIENCE 280, 280 (1987) ("[T]he majority of citizens rely on intuitive risk judgments, typically called 'risk perceptions.' For these people, experience with hazards tends to come from the news media, which rather thoroughly document mishaps and threats occurring throughout the world."). Lichtenstein *et al.* suggested such media emphases explain why judged frequencies of highly publicized causes of death (e.g., accidents, homicides, tornadoes, fires, and cancer) were relatively overestimated and underreported causes (e.g., stroke, diabetes, tuberculosis, asthma) were underestimated. The highly publicized causes appear to be more emotively charged and this may account both for their prominence in the media and their relatively overestimated frequencies. See Sarah Lichtenstein *et al.*, *Judged Frequency of Lethal Events*, 4 J. EXPERIMENTAL PSYCHOL.: HUMAN LEARNING AND MEMORY 551 (1978).

accustomed to and take for granted. And just as humans in new environments (e.g., high-altitude mountain climbing) “learn” to breathe differently and soon do it routinely, postmodern media users “learn” to adjust to new information technology and communication formats, soon taking them for granted. Media materials contribute to public perception . . . whether as “priming,” agenda setting, or shaping public discourse through news formats.¹³³

Altheide believes this shift has changed how we perceive risks, and ultimately, what and how much we fear:

Fear is more visible and routine in public discourse than it was a decade ago. . . . This communication environment is part of our everyday world; it is popular culture and we are it, and we like it; we play with it; we play with the reporters and the institutional news sources who exploit the fear script for their own benefits. The perception of many is that life is very problematic, dangerous, and demanding of extreme measures to protect us. Indeed one of the few things Americans seem to share is the popular culture that celebrates danger and fear as entertainment organized with canned formats delivered through an inexpensive and invasive information technology. Private life is closer to public concerns and issues than ever before. This is because both wear the look of popular culture. And this looks like fear.¹³⁴

¹³³ David L. Altheide, *The News Media, the Problem Frame, and the Production of Fear*, 38 SOCIOLOGICAL Q. 647, 664 (1997) (citing ERDWIN J. PFUHL & STUAN HENRY, *THE DEVIANCE PROCESS* (3d ed. 1993)); see also NOAM CHOMSKY, *MEDIA CONTROL: THE SPECTACULAR ACHIEVEMENTS OF PROPAGANDA* (2002) (extending ideas from previous work about media control of public thought to reflect on new rush-to-war); LAWRENCE LESSIG, *THE FUTURE OF IDEAS: THE FATE OF THE COMMONS IN A CONNECTED WORLD* (2001) (arguing that freedom to creatively innovate is threatened because mass media too effectively controls public domain of ideas); BEN H. BAGDIKIAN, *THE MEDIA MONOPOLY* (6th ed. 2000); BARRY GLASSNER, *THE CULTURE OF FEAR: WHY AMERICANS ARE AFRAID OF THE WRONG THINGS* (2000) (contending interface between public and media causes social fears in America); EDWARD S. HERMAN & NOAM CHOMSKY, *MANUFACTURING CONSENT* (1988) (identifying “Orwell’s Problem”: that media are part of large-scale propaganda campaign to restrict people’s knowledge, despite wealth of information available); H. AARON COHL, *ARE WE SCARING OURSELVES TO DEATH?: HOW PESSIMISM, PARANOIA, AND A MISGUIDED MEDIA ARE LEADING US TOWARD DISASTER* (1997); Albert Einstein, *Why Socialism?*, 56 MONTHLY REV. 44, 48 (May 2004) (originally published by the Monthly Review in 1949) (“[U]nder existing conditions, private capitalists inevitably control, directly or indirectly, the main sources of information (press, radio, education). It is thus extremely difficult and indeed in most cases quite impossible, for the individual citizen to come to objective conclusions.”).

¹³⁴ Altheide, *supra* note 133, at 664–65.

In an era when images, sounds, and continuous live coverage have become the staples of mass media,¹³⁵ a risk communicator's capacity to captivate and persuade an audience of a danger's "authenticity" is truly unprecedented.¹³⁶ Mass risk communication ensured that "Tylenol" became internationally associated with "deadly poison" in 1982 as a result of seven Chicago-area cyanide deaths over three days resulting from third-party tampering;¹³⁷ it ensured that cranberries got pulled off shelves nationwide and banned in several cities weeks prior to Thanksgiving 1959 because of the broadcast of a health official's ill-conceived comments about cancer risk, and ensured countless other scares.¹³⁸ With a

¹³⁵ See Ann Bostrom & Ragnar E. Lfstedt, *Communicating Risk: Wireless and Hardwired*, 23 RISK ANALYSIS 241, 245 (2003) ("Words are becoming bit players on the risk communication stage, where graphical depiction of risk is increasingly common.").

¹³⁶ In the age of visual media, imprudent image selection can lead to false causal inferences, and potentially to fear, even if a risk communicator aspires to present a portrayal consistent with EBL. As Northwestern University scholar Les Friedman has said, "there are no neutral images in film." Lester D. Friedman, *High Anxiety: Medicine, Morals and the Media*, Lecture at Stanford University School of Medicine (October 1, 2003); see also Celio Ferreira et al., *From Vision to Catastrophe: A Risk Event in Search of Images*, in RISK, MEDIA, AND STIGMA: UNDERSTANDING PUBLIC CHALLENGES TO MODERN SCIENCE AND TECHNOLOGY 283 (James Flynn et al. eds., 2001) (concluding that visual images by their nature are better suited to converting neutral objects to CSs than text or radio); Altheide, *supra* note 133, at 665 (concluding about media risk communication that "[c]arried with the message of fear are images and targets of what and who is to be feared. Attached to these ideal types of villains and threats are formal agents of social control who are associated with the available solutions to these problems."); George Gerbner, *Reclaiming Our Cultural Mythology: Television's Global Marketing Strategy Creates a Damaging and Alienated Window on the World*, in CONTEXT 40 (Spring 1994) ("[T]elevision is a mythology—highly organically connected, repeated every day so that the themes . . . run through all programming and news have the effect of cultivating conceptions of reality."), available at <http://www.context.org/ICLIB/IC38/Gerbner.htm>; cf. *Armstrong v. H & C Communications, Inc.*, 575 So. 2d 280, 282 (Fla. Dist. Ct. App. 1991) (awarding intentional infliction of emotional distress damages to parents of abducted and murdered daughter against television station that broadcast images of girl's skull on her funeral day).

¹³⁷ Mark L. Mitchell, *The Impact of External Parties on Brand-Name Capital: The 1982 Tylenol Poisonings and Subsequent Cases*, 27 ECON. INQUIRY 601, 601 (1989) (estimating that as a result of third-party retail Tylenol tampering over three days only in Chicago resulting in seven deaths, Johnson & Johnson received over \$1 billion in adverse media publicity—with over 125,000 print media articles alone—and a 14% reduction (\$1.24 billion wealth decline) in the company's market capitalization).

¹³⁸ Cf. Sean P. Hier, *Risk and Panic in Late Modernity: Implications of the Converging Sites of Social Anxiety*, 54 BRIT. J. SOCIOL. 3, 10–12 (2003) (observing increasing proliferation of moral panics in modern society as symptom of heightened general awareness of risks). See generally STEVEN J. MILLOY, *JUNK SCIENCE JUDO: SELF-DEFENSE AGAINST HEALTH SCARES & SCAMS* (2001) (contending media has skewed public perceptions of numerous scientific topics); AMERICAN COUNCIL ON SCIENCE AND HEALTH, *FACTS VERSUS FEARS: A REVIEW OF THE*

persuasive blend of fact and fantasy, a risk communicator can sow fear. Risk communication of any kind, *but especially in its modern visual and audio forms*, must therefore be wielded with utmost caution.

We must pause to stress there is nothing universally bad about risk communication. Risk perception *commensurate with an epistemic risk* can be of great benefit. Proper risk communication allows individuals to perceive risks that they are “at risk” of later encountering. Good communication allows *behavioral modifications* such as risk avoidance, risk preparation, and risk reduction—both individually and at a regulatory level.¹³⁹ Moreover, when risk communication

GREATEST UNFOUNDED HEALTH SCARES OF RECENT TIMES (3d ed. 1999) (reviewing the deleterious effects of 25 prominent fear epidemics based on nomological possibilities or minute epistemic risks, including the 1959 Cranberry Scare, Red Dye Number 2, saccharin, hair dyes, Three Mile Island, and cellular phones); CARL SAGAN, *BROCA’S BRAIN: REFLECTIONS ON THE ROMANCE OF SCIENCE* chs. 5–9 (1974) (recounting various historical anecdotes of “Paradoxers”—pseudoscientists—who propagated widespread myths).

¹³⁹ Existentialist psychologists used to assert one can think of both “normal” and “pathological” *actions* as behavioral outlets that reduce a person’s natural anxiety prompted by a fearful stimulus:

By and large, behavior that reduces anxiety also operates to lessen the danger that it presages. An antelope that scents a panther is likely not only to feel less uneasy (anxious) if it moves out of the range of the odor of the panther but also likely to be in fact somewhat safer. A primitive village that is threatened by marauding men or beasts sleeps better after it has surrounded itself with a deep moat or a sturdy stockade. And a modern mother is made emotionally more comfortable after her child has been properly vaccinated against a dreaded disease. This capacity to be made uncomfortable by the mere prospect of traumatic experiences, in advance of their actual occurrence (or reoccurrence), and to be motivated thereby to take realistic precautions against them, is unquestionably a tremendously important and useful psychological mechanism, and the fact that the forward-looking, anxiety-arousing propensity of the human mind is more highly developed than it is in lower animals probably accounts for many of man’s unique accomplishments. But it also accounts for some of his most conspicuous failures.

O. Hobart Mowrer, *A Stimulus-Response Analysis of Anxiety and Its Role as a Reinforcing Agent*, 46 PSYCHOL. REV. 553, 553 (1939); see also TUNDE AGBOLA, *THE ARCHITECTURE OF FEAR: URBAN DESIGN AND CONSTRUCTION RESPONSE TO URBAN VIOLENCE IN LAGOS, NIGERIA* (1997) (finding that Nigerian urban planning gravitated toward “target hardening” of buildings and public areas in response to crime epidemic); Patricia Allatt, *Fear of Crime: The Effect of Improved Residential Security on a Difficult To Let Estate*, 23 HOW. J. CRIM. JUST. 170, 170–71 (1984) (conducting prospective experimental study with negative control and finding that security measures installed in one housing estate did not change risk of burglary, but did cause fear of burglary to fall significantly relative to estate without security improvements).

Recent laboratory research shows the existentialist thinkers may have been on to something. One trio of authors conducted a series of experiments in which a rat was conditioned to a tone-shock combination, which made the tone a feared stimulus too. Thereafter, the animal would freeze (its natural fear response) upon hearing the tone alone. The

properly addresses epistemic risks that can also be *directly* perceived, it may either preempt people from forming errant risk perceptions by their own risk encounters, or correct skewed perceptions already established.¹⁴⁰

Like any tool, however, communication can be abused. Puzzled scientists wonder how their discoveries of minute (sometimes nearly imperceptible) risks, or even their *hypotheses*, sometimes become society's fears.¹⁴¹ Aaron Wildavsky presented the enigma elegantly years ago:

fear-conditioned animal was transferred to a new box and the tone again sounded without an accompanying shock. In initial rounds, the animal would freeze, but subsequently, it learned to *escape* the chamber to minimize its exposure to the fearful stimulus. The study also showed there are distinct regions of the amygdala that control the fear response (freezing) and the conditioned response (escapism). See Prin Amorapanth et al., *Different Lateral Amygdala Outputs Mediate Reactions and Actions Elicited by a Fear-Arousing Stimulus*, 3 NATURE NEUROSCI. 74, 75–78 (2000); see also JOHN C. DOLLARD & NEIL E. MILLER, PERSONALITY AND PSYCHOTHERAPY 15 (1950) (concluding from similar experimentation that when “[a conditioned response] occurs it is reinforced because it reduces neurotic misery. The symptom is thus learned as a habit.”).

¹⁴⁰ Risk perception is sometimes skewed by personal experience. It is unlikely that accurate risk communication can correct an *established* skewed or baseless risk perception because “first impression matters most.” However, accurate risk communication could beneficially and successfully *preempt* risk perception that might otherwise be skewed by personal experience. Some advocates even call for social bombardment with accurate risk information to preempt errant risk perception. For instance, William Leiss advances an interesting counterargument that epistemic risks should *always* be communicated to the general public, if only to prevent irresponsible risk communicators from “hijacking” certain stimuli and conditioning the public to wrongly see them as risks. See William Leiss, *Dioxins, or Chemical Stigmata*, in RISK, MEDIA, AND STIGMA: UNDERSTANDING PUBLIC CHALLENGES TO MODERN SCIENCE AND TECHNOLOGY 258 (James Flynn et al. eds., 2001). Leiss’s solution to this problem is probably not feasible—there are simply not enough hours in the day to effectively communicate *all* epistemic risks. This article’s premise of placing liability on negligent or intentionally harmful risk communicators resolves Leiss’s worry while respecting realistic time and economic constraints on information dissemination.

¹⁴¹ Occasionally scientists *are not* puzzled about how this occurs—they identify a culprit “risk” communicator:

Shortly after our paper on p53 . . . gene mutations in uranium miners was published, . . . there was an inquiry as to whether we could use the TP53 mutations as evidence in a court case for occupational exposure causing larynx cancer in a miner. At that point the hypothesis of TP53 mutations as an indicator of exposure was new, . . . and it was self-evident that no firm scientific conclusions, let alone use as evidence in court, could be drawn. We had to disappoint the attorney, who, optimistically however, after a long correspondence of the pros and cons of mutation analysis of TP53, asked whether he could now send the tumor sample for me to analyze . . . end of correspondence!

Kirsi Vähäkangas, *TP53 Mutations in Workers Exposed to Occupational Carcinogens*, 21 HUMAN MUTATION 240, 240 (2003).

How extraordinary! The richest, longest lived, best protected, most resourceful civilization, with the highest degree of insight into its own technology, is on its way to becoming the most frightened. Is it our environment or ourselves that have changed? Would people like us have had this sort of concern in the past? . . . Today, there are risks from numerous small dams far exceeding those from nuclear reactors. Why is the one feared and not the other? Is it just that we are used to the old or are some of us looking differently at essentially the same sorts of experience?¹⁴²

There is an answer to Wildavsky's bafflement. We concluded earlier that risk communication is supposed to bridge a growing divide between *ability* to perceive risks and the *need* or *desire* to do so. A risk communicator who fails to *correctly* bridge this divide, to shape public perceptions *commensurate* with evidence-based knowledge about a risk, causes unwarranted fear or panic by skewing risk perceptions.¹⁴³ Thus, a dutiful risk communicator should have to assess which possibilities are epistemic under EBL. And after that, he should be compelled to anticipate cognitive psychological pitfalls in communicating with

¹⁴² Aaron Wildavsky, *No Risk is the Highest Risk of All*, 67 AM. SCIENTIST 32, 32 (1979); see also STEPHEN BREYER, BREAKING THE VICIOUS CIRCLE: TOWARD EFFECTIVE RISK REGULATION 39 (1993) ("There is little reason to hope for better risk communication over time. To the contrary, as science improves, scientists may more easily detect and identify even tinier risks—the risks associated, for example, with the migration of a single molecule of plastic from a container into a soft drink. . . ."); Joel Best, *Social Progress and Social Problems: Toward a Sociology of Gloom*, 42 SOCIOLOGICAL QUARTERLY 1 (2001) (observing the paradox that despite the decreases in epistemic risks and the remarkability of social progress, the risk perception and fears of most Americans continue to increase).

¹⁴³ This paper focuses on baseless or *upwardly* skewed perceived risks. Our conclusions about upwardly skewed risk perception don't seem to hold as forcefully for *downwardly* skewed risk perception. For example, should weather services be liable for negligently forecasting bad weather, such that ships, aircraft, property, or lives are endangered? *Accord* Roberta Klein & Roger A. Pielke, Jr., *Bad Weather? Then Sue the Weatherman! Part II: Legal Liability for Private Sector Forecasts*, 83 BULL. AM. METEOR. SOC'Y. 1801, 1805 (2002) (listing cases and concluding that "[a]bsent statutory immunity or a valid limitation of liability clause, private sector forecasters who are sued will have to defend lawsuits for inaccurate forecasts on their merits"); R.B. Loper, *Red Sky in the Morning, Forecasters Take Warning: The Liability of Meteorologists for Negligent Weather Forecasts*, 66 TEX. L. REV. 683, 683–97 (1988). Taken to its logical extreme, should risk communicators be liable for failing to report *at all* on an epistemic risk, to leave people totally in the dark about a risk? We think not. Tort law typically does not assign liability for *omissions* (i.e., failures to risk communicate). Moreover, some epistemic risks may be so small that they are not worthy of protracted attention—they are not news. Finally, if attention *were* given to such risks, then the risk communicator paradoxically is threatened with liability for *upwardly* skewing risk perceptions.

his audience.¹⁴⁴ Few risk communicators today—even those with the best intentions—fulfill this risk communication duty we are proposing. Take journalism, for example (though the principle of dutiful service as a risk communicator would clearly be more generalizable): most reporters claim to be bound by professional “standards” of integrity, and hold themselves out (sometimes explicitly, sometimes implicitly) as truth tellers. But the non-rigor of current reporting standards ultimately *guarantees* some journalists will report contextual falsehoods or wholesale fictions, either intentionally or negligently.¹⁴⁵

¹⁴⁴ An extended discussion of these two duties of a risk communicator, and how one might go about fulfilling them, is frustrated here by space limitations. I intend a later essay on the subject.

¹⁴⁵ Journalist Sharon Dunwoody laments that typical reporting “standards” are too flimsy to capture what is “known” epistemically about a given issue, causal relationship, etc.:

When sources offer conflicting truth claims, reporters pull out of their toolboxes two strategies to counteract their inability to establish validity. One strategy is [literalism]: If you cannot tell if someone is telling the truth, you can at least make sure that you accurately capture the message and attribute it. . . .

The other strategy is balance: If you cannot distinguish the true statements from the untrue ones, then the best strategy is to present an array of viewpoints. . . .

The [literalism] norm urges journalists to leave their own analytical skills at home and to concentrate, instead, on conveying what they see and hear. When a scientific controversy erupts, this may mean that a reporter will feel responsible for conveying a point of view, no matter how scientifically aberrant it may be.

. . . .

The balance norm also requires that a journalist suspend her analytical judgment, this time to give equal space to competing points of view regardless of their likelihood of being correct.

Sharon Dunwoody, *Scientists, Journalists, and the Meaning of Uncertainty*, in *COMMUNICATING UNCERTAINTY: MEDIA COVERAGE OF NEW AND CONTROVERSIAL SCIENCE* 71–72 (Sharon M. Friedman et al. eds., 1999). It is risk communicators’ present lack of rigorous standards for assessing what is “known” (like EBL) that permits *intentionally* deceitful risk communicators to persist, too. This is because there is no distinct line between negligent error and intentional misinformation about so-called “risks”—both are possible when risk communication channels permit the flow of information not vetted by EBL. Altheide motivates the principle well in referring to journalist interviews:

When journalists submit composite sketches of various interviews as a “real person,” or simply make up cases, there is far more than mere ethics of reporting involved: *These practices reveal a crack is opening in some epistemic contradictions of journalistic interviewing.* Every case of false reporting . . . involves fictitious detailed accounts and understanding . . . that resemble thoroughly executed interviews. *The stories offered, made up as they are, are reflexive of a process of data gathering that, were it carried out, might paint a similar picture.*

Let us recap the last two sections: these days, fear is usually achieved through risk communication. Fear *commensurate* with an epistemic risk is an unavoidable by-product of disseminating potentially helpful risk information, but if risk communication *skews* risk perceptions, fear arising from that “skew” is *needless*. Present-day law, as we will next see, doesn’t generally take the efficacy of risk communication into account when it assigns fear liability.¹⁴⁶ And as *Dempsey v. Hartley*’s “breast cancer from a car accident” holding in Part I revealed, law doesn’t distinguish between epistemic risks and nomological possibilities (“risk” hypotheses) in penalizing physical injurers for fear. Accountability for unjustified fearmongerers and fair and proportionate liability for physical injurers both seem necessary if fear liability is to be just and sensible.

III. LAW’S FOUR OLD-FASHIONED RESTRICTIONS ON EMOTIONAL HARMS

Courts have always been wary of “unlimited” fear liability.¹⁴⁷ Emotional harms related to economic or property loss,¹⁴⁸ or humiliation, indignities, or

DAVID L. ALTHEIDE, *CREATING FEAR: NEWS AND THE CONSTRUCTION OF CRISIS* 111 (2002) (emphasis added).

¹⁴⁶ Cf. *Cowras v. Hard Copy*, 56 F. Supp. 2d 207, 211 (Conn. 1999) (holding media defendants liable under NIED claim because they “made no attempt to ascertain the truth for fear of killing what they believed was a ‘great story’”).

¹⁴⁷ See *Consol. Rail Corp. v. Gottshall*, 512 U.S. 532, 546 (1994):

[State] courts have realized that recognition of a cause of action for negligent infliction of emotional distress holds out the very real possibility of nearly infinite and unpredictable liability for defendants. Courts therefore have placed substantial limitations on the class of plaintiffs that may recover for emotional injuries and on the injuries that may be compensable.

Id.

¹⁴⁸ See *Erllich v. Menezes*, 981 P.2d 978, 987 (Cal. 1999) (“[E]motional distress damages in connection with property damages are not compensable.”); *Potter v. Firestone Tire & Rubber Co.*, 863 P.2d 795, 808 (Cal. 1993) (“[W]ith rare exceptions, a breach of duty [permitting emotional distress recovery] must threaten physical injury, not simply damage to property or financial interests.”) (en banc) (citations omitted); *Brogan v. Mitchell Int’l, Inc.*, 692 N.E.2d 276, 279 (Ill. 1998) (finding no duty to convey accurate economic information about a firm’s financial health to a prospective employee so as to avoid creating emotional distress); *Day v. Montana Power Co.*, 789 P.2d 1224, 1227 (Mont. 1990) (no emotional harms for negligent destruction of restaurant); *Tiller v. St. Louis & S.F.R. Co.*, 189 F. 994, 1000–01 (W.D. Okla. 1911) (no recovery for fright attributable to negligent burning of plaintiff’s dwelling); *Miller v. Baltimore & O. S. W. R.R. Co.*, 85 N.E. 499, 504 (Ohio 1908) (no emotional harms damages for witnessing street car collide with plaintiff’s dwelling). *But see* *Rodrigues v. State*, 472 P.2d 509, 520 (Haw. 1970) (allowing recovery for emotional injuries where negligence caused flooding of house plaintiff had built himself), *modified by* HAW. REV. STAT. § 663-8.9 (1986):

insults¹⁴⁹ have never been recoverable. Even for emotional harms related to physical injury, which *are* sometimes cognizable, courts have limited liability by four forms of restrictions: (1) preference for fears resulting from *realized* physical harm over fears resulting from unrealized risks; (2) preference for short-term fear (i.e., fright or shock); (3) permitting damages only for “genuine and serious” fears; and, (4) *only in bystander fear cases*, by limiting recovery to those bystanders whose temporal and spatial proximity to a fearful event allows them to adequately perceive it, and who are closely related to the physically harmed victim. As we will see, these limitations—as courts themselves are often the first to admit—are largely non-sensible.

There is a further problem with the present judicial model of fear liability: recall that *risk communication*, not personal experience, causes most fear these days.¹⁵⁰ As the following sections evidence, fear damages center almost exclusively on the rare *personal encounters* people have with fear-conditioning stimuli. In today’s media- and virtual-world, this judicial model is outdated, simplistic, and ineffective.

A. Physical Impact

State courts, beginning in the 1890s, adopted a “physical impact” test requiring a plaintiff to suffer *actual, realized* physical injury to receive accompanying emotional damages.¹⁵¹ This original physical impact test

No party shall be liable for the negligent infliction of serious emotional distress or disturbance if the distress or disturbance arises solely out of damage to property or material objects, [but] [t]his section shall not apply if the serious emotional distress or disturbance results in physical injury to or mental illness of the person who experiences the emotional distress or disturbance.

Id. See generally Peter H. Huang, *Regulating Irrational Exuberance and Anxiety in Securities Markets*, in *THE LAW AND ECONOMICS OF IRRATIONAL BEHAVIOR* (Francesco Parisi & Vernon Smith eds., 2004) (analyzing effects of emotional responses to securities disclosures’ form and content and arguing for mandatory disclosure of irrational exuberance and anxiety).

¹⁴⁹ *Foley v. Polaroid Corp.*, 508 N.E.2d 72, 82 (Mass. 1987) (emotional distress cases “cannot be predicated on ‘mere insults, indignities, threats, annoyances, petty oppressions or other trivialities’”) (quoting Restatement (Second) of Torts § 4.6). *But see* ROBERT NOZICK, *ANARCHY, STATE, AND UTOPIA* 70 (1974) (“[O]ne should not leap to the conclusion that when it is known that compensation will be paid, only physical injury or pain is feared and viewed with comprehension. Despite knowing that they will be compensated if it occurs, people also may fear being humiliated, shamed, disgraced, embarrassed, and so on.”).

¹⁵⁰ See *supra* Part II.D.

¹⁵¹ See, e.g., *Spade v. Lynn & B.R. Co.*, 47 N.E. 88, 89 (Mass. 1897), *overruled by* *Dziokonski v. Babineau*, 380 N.E.2d 1295, 1296 (Mass. 1978). The court in *Spade* noted that:

disregarded all fears arising absent a physical impact—including instances when someone was negligently placed *at apparent risk of physical harm*, but suffered no injury.¹⁵² In an extreme instance, one pregnant woman, nearly trampled by runaway horses, could not recover for her fright and ultimate miscarriage.¹⁵³ States gradually rejected the physical impact test because of this underinclusivity.¹⁵⁴ One alternative was to allow a plaintiff to recover for fright subsequent¹⁵⁵ to a physical contact, “*no matter how slight*” that contact was.¹⁵⁶

[T]here can be no recovery for fright, terror, alarm, anxiety, or distress of mind, if these are unaccompanied by some physical injury; and, if this rule is to stand, we think it should also be held that there can be no recovery for such physical injuries as may be caused solely by such mental disturbance, where there is no injury to the person from without.

Id.; see also *Mitchell v. Rochester R. Co.*, 45 N.E. 354, 355 (N.Y. 1896); *Ewing v. Pittsburgh, C., C. & St. L. R. Co.*, 23 A. 340, 341 (Pa. 1892); Archibald H. Throckmorton, *Damages for Fright*, 34 HARV. L. REV. 260, 260 (1921).

¹⁵² *Ward v. West Jersey & Seashore R.R. Co.*, 47 A. 561, 561 (N.J. 1900) (holding that emotional harm without physical injury was not a basis for fear damages); see also RESTATEMENT (SECOND) OF TORTS § 436A (1965). Note that *intentional* infliction of emotional distress (IIED) cases, however, *do* allow for such recoveries. See, e.g., *Daniels v. Adkins Protective Service, Inc.*, 247 So. 2d 710, 711 (Miss. 1971).

¹⁵³ *Mitchell v. Rochester Ry. Co.*, 45 N.E. 354, 355 (N.Y. 1896). The original physical impact test also categorically blocked *bystanders'* capacity to recover for the same reason that no simultaneous physical harm had befallen them. See *Hutchinson v. Stern*, 115 A.D. 791, 792 (N.Y. App. Div. 1906) (woman prematurely giving birth to stillborn child after watching tortfeasor beat husband on head, attack him with knife, and chase husband across tortfeasor's property could not recover for emotional harms).

¹⁵⁴ See, e.g., *Larsen v. Pacesetter Sys., Inc.*, 837 P.2d 1273, 1277 (Haw. 1992). The *Larsen* court noted that “[t]he impact rule has been repudiated by a majority of courts because of its absurd results and arbitrary nature.” *Id.* (citing F. HARPER, F. JAMES & O. GRAY, THE LAW OF TORTS § 18.4, at 686–87 (2d ed. 1986); *Rickey v. Chicago Transit Authority*, 457 N.E.2d 1, 4 (Ill. 1983); *Battalla v. State*, 176 N.E.2d 729, 731 (N.Y. 1961); *Niederman v. Brodsky*, 261 A.2d 84, 85 (Pa. 1970)). But see *Tanner v. Hartog*, 696 So. 2d 705, 708 (Fla. 1997) (retaining the physical impact rule, but allowing exceptions for worthy emotional harms on case-by-case basis); *Norwest v. Presbyterian Intercommunity Hosp.*, 652 P.2d 318, 327 (Or. 1982) (“[This court has] not yet extended liability for ordinary negligence to solely psychic or emotional injury not accompanying any actual or threatened physical harm or any injury to another legally protected interest.”).

¹⁵⁵ Fright that arose *before* physical impact was not compensable. Only in the 1970s and 1980s did some state courts begin granting “pre-impact” fright damages, whereby the estate of an accident-aware passenger sometimes could recover for pre-impact fear of death. See *In re Air Crash Disaster Near New Orleans, Louisiana*, 789 F.2d 1092, 1098 (5th Cir. 1986) (applying Louisiana law); *Feldman v. Allegheny Airlines, Inc.*, 382 F. Supp. 1271, 1301 (Conn. 1974); *Shatkin v. McDonnell Douglas Corp.*, 727 F.2d 202, 206 (2d Cir. 1984) (applying New York law); *Malacynski v. McDonnell Douglas Corp.*, 565 F. Supp. 105, 106 (S.D.N.Y. 1983); *Platt v. McDonnell Douglas Corp.*, 554 F. Supp. 360, 363–64 (E.D. Mich. 1983); *Solomon v.*

Yet even under this modified physical impact test, certain physical impact (albeit trivial), not simply risk, is a prerequisite for fear liability.¹⁵⁷

The far more popular replacement for the original physical impact test is the so-called "zone of danger" test.¹⁵⁸ It permits recovery for fear if a plaintiff *either*

Warren, 540 F.2d 777, 793 (5th Cir. 1976) (applying Florida law); Port Terminal R.R. Assoc. v. Sweet, 640 S.W.2d 362, 367 (Tex. App. 1982) (applying FELA), *aff'd*, 653 S.W.2d 291 (Tex. 1983). Two states have adopted the contrary view. *See* Nye v. Pennsylvania Department of Transportation, 480 A.2d 318, 321 (Pa. Super. Ct. 1984); *In re Air Crash Disaster Near Chicago, Illinois on May 25, 1979*, 507 F. Supp. 21, 23 (N.D. Ill. 1980); *cf.* Fogarty v. Campbell 66 Express, Inc., 640 F. Supp. 953, 963 (D. Kan. 1986) (stressing that evidence of extended skid marks before the deceased impacted the other vehicle meant that "[b]ased on human nature, a jury could certainly find that decedent suffered emotional distress during that braking period, as well as during the preceding reaction time between his recognition of the danger and his application of the brakes.").

¹⁵⁶ *Gottshall*, 512 U.S. at 547 (emphasis added). After modification, the once restrictive physical impact test became, ironically, the most accommodating of emotional injury claims in states that recognized (or still recognize) it. *See, e.g.*, Marchica v. Long Island R.R. Co., 31 F.3d 1197, 1202–03 (2d Cir. 1994) (hypodermic needle stick without any evidence of HIV contamination and negative HIV test results); Deutsch v. Shein, 597 S.W.2d 141, 146 (Ky. 1980) (commenting that "[c]ontact, however slight, trifling, or trivial, will support a cause of action," and concluding that X-rays of pregnant plaintiff were sufficient contact to support a claim for emotional damages stemming from fear that the X-rays would injure fetus); Porter v. Delaware, L & W. R.R. Co., 63 A. 860, 860 (N.J. 1906) (dust in the eyes); Morton v. Stack, 170 N.E. 869, 869 (Ohio 1930) (per curiam) (smoke inhalation); Christy Bros. Circus v. Turnage, 144 S.E. 680, 681 (Ga. Ct. App. 1928) (where a circus horse excreted in plaintiff's lap, holding that an "unlawful touching of a person's body, although no actual physical hurt may ensue therefrom, yet, since it violates a personal right, constitutes a physical injury to that person"), *overruled by* OB-GYN Assocs. v. Littleton, 386 S.E.2d 146, 149 (Ga. 1989).

¹⁵⁷ Naturally, when the requisite threshold harm from physical impact becomes so trivial, a judge could implicitly assess whether a risk is the cause of fear. The point here is that the *form* of the modern physical impact test does not take epistemic risk into account; whether judges are doing so *sub rosa* is a different matter.

¹⁵⁸ The zone of danger test was created at about the same time as the physical impact test. *See, e.g.*, Watson v. Dilts, 89 N.W. 1068, 1069–70 (Iowa 1902); Stewart v. Arkansas Southern R.R. Co., 36 So. 676, 677 (La. 1904); Purcell v. St. Paul City R.R. Co., 50 N.W. 1034, 1035 (Minn. 1892); Kimberly v. Howland, 55 S.E. 778, 780 (N.C. 1906); Simone v. Rhode Island Co., 66 A. 202, 209 (R.I. 1907); Mack v. South-Bound R.R. Co., 29 S.E. 905, 910 (S.C. 1898); Gulf, C. & S.F.R. Co. v. Hayter, 54 S.W. 944, 945 (Tex. 1900); Pankopf v. Hinkley, 123 N.W. 625, 627 (Wis. 1909). A majority of state courts, as well as federal courts under FELA, have adopted this rule as their NIED test. *See, e.g.*, *Gottshall*, 512 U.S. at 555; Falzone v. Busch, 214 A.2d 12, 17 (N.J. 1965) ("[W]here negligence causes fright from a reasonable fear of immediate personal injury, which fright is adequately demonstrated to have resulted in substantial bodily injury or sickness, the injured person may recover if such bodily injury or sickness would be regarded as proper elements of damage had they occurred as a consequence of direct physical injury rather than fright."); Battalla v. State, 176 N.E.2d 729, 732 (N.Y. 1961)

(1) sustains a physical impact as a result of the defendant's negligent conduct or (2) is placed in immediate risk of physical harm by that conduct.¹⁵⁹

Focus for now on the second prong, which permits recovery of "immediate" post-impact fright, even if a plaintiff suffers no physical harm. Analogous to punishment for attempt crimes, the rule uncouples fear from *assured* physical harm: it is penalizing *risks*. Remember: *risks*—and not *certainty* of harm—underlie fear. We should therefore like this test for basing fear liability on risks of physical harm.¹⁶⁰ Yet the zone of danger rule is still too simplistic by assuming that wherever a person is at risk of physical harm, fear results. Thus in Part IV, we will consider a more objective framework for establishing physical injurer fear liability that incorporates notions of risk *perception*—an element missing from the zone of danger test.

(infant girl negligently allowed to ride ski lift without seat restraint can sue for fright and hysteria she suffered).

¹⁵⁹ See generally *Gottshall*, 512 U.S. at 547–48. Some state courts also require that a plaintiff prove a "physical manifestation" of a claimed emotional injury to recover under the zone-of-danger test. See, e.g., *Laxton v. Orkin Exterminating Co.*, 639 S.W.2d 431, 432 (Tenn. 1982) ("[T]here can be no recovery for shock or fright unless it manifests itself in physical injury or physical pain."); see also *Nancy P. v. D'Amato*, 517 N.E.2d 824, 826 (Mass. 1988); *Garvis v. Employers Mut. Cas. Co.*, 497 N.W.2d 254, 257 (Minn. 1993); *Muchow v. Lindblad*, 435 N.W.2d 918, 921 (N.D. 1989); *Ayers v. Jackson Township* ("Ayers II"), 461 A.2d 184, 189 (N.J. Super. Ct. Law. Div. 1983), *aff'd* by *Ayers vs. Township of Jackson* ("Ayers III"), 525 A.2d 287 (N.J. 1987); *Lien Trinh v. Allstate Ins. Co.*, 37 P.3d 1259, 1264 (Wash. Ct. App. 2002) (finding NIED claim to be jury question where insured watched best friend die while he was struck changing her car's tire and she suffered post-traumatic stress disorder with evident physical manifestations thereafter); RESTATEMENT (SECOND) TORTS § 436A. But see *Bass v. Nooney Co.*, 646 S.W.2d 765, 772–73 (Mo. 1983) (abolishing Missouri's physical manifestation requirement); *Johnson v. Ruark Obstetrics & Gynecology Associates*, 395 S.E.2d 85, 97 (N.C. 1990) (subsequent physical manifestations not necessary if negligence producing foreseeable and "severe" emotional harm); *Bowen v. Lumberman's Mut. Cas. Co.*, 517 N.W.2d 432, 434 (Wis. 1994) (no requirement of physical manifestation where mother suffers emotional distress when child is killed). Some courts that require post-emotional harm physical impact have lessened this requirement so greatly as to make it inconsequential. See, e.g., *Whalley v. Sakura*, 804 F.2d 580, 583 (10th Cir. 1986) (applying New Mexico law) (allowing recovery where post-emotional harm impact included "loss of energy, fatigue, psychomotor retardation or slowing down of . . . mobility, low energy level, and sleep disturbance").

¹⁶⁰ The Supreme Court, which has adopted the zone of danger test for FELA cases, defends this prong by asserting "a near miss may be as frightening as a direct hit." *Gottshall*, 512 U.S. at 547 (quoting Richard N. Pearson, *Liability to Bystanders for Negligently Inflicted Emotional Harm—A Comment on the Nature of Arbitrary Rules*, 34 U. FLA. L. REV. 477, 488 (1982)). Scientifically speaking, this is a good move. There is no biological basis to differentiate fear prompted by close calls and fear resulting from actual impact. A zebra chased heatedly yet unsuccessfully by a lion across the savanna is assuredly as fearful as the one who is chased and eaten. See generally ROBERT SAPOLSKY, *WHY ZEBRAS DON'T GET ULCERS* (2d ed. 1998).

But our next goal is to understand another typical fear liability restriction: why courts prefer to award damages for short-lived *fright* and its emotional consequences, not protracted or delayed-onset fears. Does this make sense? Let us see.

B. *Fright*

What courts *mean* by “fear” has changed over time. In 1900, the original physical impact test only recognized *fright*—“fear” that arises temporarily and “immediately” after a sudden, unexpected encounter with a risk of physical harm.¹⁶¹ Lasting emotional suffering or anxiety was not compensable.¹⁶²

Courts continue to prefer fright to fear claims.¹⁶³ Yet medicine and psychology now acknowledge gradually developing or long-term “fears” of physical harms (“*protracted fears*”) can be more harmful than fright.¹⁶⁴ The

¹⁶¹ *Pennsylvania Co. v. White*, 242 F. 437, 439–40 (6th Cir. 1917) (“There is not wanting respectable authority that recovery may be had for injuries proximately occasioned by fright or shock due to defendant’s actionable negligence, although not attended by direct physical invasion of the person.”) (citing *Stutz v. C. & N.W. Ry. Co.*, 40 N.W. 653 (Wis. 1888) and *Pankopf v. Hinkley*, 123 N.W. 625 (Wis. 1909)).

¹⁶² *See, e.g., Levy v. Indem. Ins. Co.*, 8 So. 2d 774, 782 (La. Ct. App. 1942) The Court in *Levy* held that because “the duration of [insanity] affliction is not susceptible of definite determination,” that

[i]t is not shown, nor can it be definitely shown, that the physical trauma itself had a predominating influence in producing a recurrence of the mental disorder, but it is practically certain the anxiety of and brooding by the patient over his condition and the fear of a return to insanity, in a large measure, at least, accounts for such recurrence.

Id. at 781.

¹⁶³ “The zone of danger rule curiously reflect[s] or reinforce[s] this [fright-based] conception of emotional harm by emphasizing immediate physical danger” DAN B. DOBBS, *THE LAW OF TORTS* § 311, at 843 (2000); *accord Bonnette v. Conoco, Inc.*, 837 So. 2d 1219, 1234 (La. 2003) (quoting *Moresi v. State Dep’t of Wildlife Fisheries*, 567 So. 2d 1081, 1096 (La 1990). The *Bonnette* court noted:

[A] defendant will generally not be held liable where his conduct is merely negligent and causes only emotional injury unaccompanied by physical injury. . . . [D]eviations from this general rule in various situations includ[e] those cases that involve fright or nervous shock, where the plaintiff was actually in great fear for his personal safety.

837 So. 2d at 134.

¹⁶⁴ Anxiety, for instance, has been equated with having unresolved fears. *See Öhman, supra* note 123, at 511–36. Other protracted (sometimes lifetime) fears include persistent

Supreme Court (along with state courts) has only recently begun contemplating whether and how it should compensate protracted fear. In *Urie v. Thompson*, a 1949 FELA case addressing extended occupational exposure to silica dust, the Court abolished distinction between protracted and immediate *physical* injuries.¹⁶⁵ *Urie*'s equalization of protracted and immediate injuries now appears to apply to emotional harms, because *Ayers* states: "the common law ha[s] evolved to encompass apprehension of future harm as a component of pain and suffering."¹⁶⁶

Despite *Ayers*'s proclamation, the Court isn't really comfortable with protracted fear claims. For instance, in 1997 in *Metro North v. Buckley*, a railroad employee, outwardly healthy when he filed suit, had been occupationally exposed to asbestos dust over several years and sought damages for his fear of contracting cancer. He acceded his fear did not come within the zone of danger's second prong because it didn't result from an "immediate" risk of physical harm. Rather, he claimed that asbestos had made continuous "physical impacts" on him, that those repeated exposures were the impetus for his cancer fears, and that they fell within the zone of danger's *first* prong—fear stemming from negligently caused physical impacts.

The Court denied relief and implied that even under this first prong of the zone of danger test—the physical impact prong—damages were typically reserved for *short-term* emotional distress arising from physical contact "that caused, or might have caused, immediate traumatic [physical] harm."¹⁶⁷ Why? After all, the Court had never indicated that fright is the only cognizable fear injury; indeed, *Ayers*'s quote above suggests the contrary. Further, the physical impact prong on its face does not require fear be an immediate consequence of physical impact. The prong therefore seems to offer the perfect cover to accommodate protracted fear recoveries, if courts so wished. Yet they have done

general anxieties, post-traumatic stress disorders (PTSDs), obsessive-compulsive disorders (OCDs), panic attacks, or specific phobias.

¹⁶⁵ *Urie v. Thompson*, 337 U.S. 163, 186–87 (1949). The court in *Urie* stated:

In our view, when [a tortious] employer's negligence impairs or destroys an employee's health by requiring him to work under conditions likely to bring about such harmful consequences, the injury to the employee is just as great when it follows, often inevitably, from a carrier's negligent course pursued over an extended period of time as when it comes with the suddenness of lightning. . . . *We do not think the mere difference in the time required for different acts of negligence to take effect and disclose their harmful, disabling consequences would justify excluding the one type of injury from the Act's coverage*

Id. (emphasis added).

¹⁶⁶ *Norfolk & Western Railway Co. v. Ayers*, 538 U.S. 135, 149 (2003).

¹⁶⁷ *Metro North v. Buckley*, 521 U.S. 424, 430 (1997).

the opposite. Fright damages are generally preferred to protracted fear damages under *either* prong in the zone of danger test.¹⁶⁸ No matter what sweeping statements they make to the contrary, courts don't like recognizing protracted fear.¹⁶⁹

If courts' preference for fright over protracted fears is an attempt to limit liability, it won't. Orson Welles's broadcast is one example of immediate fright where liability would be effectively unlimited. Second Circuit judge Guido Calabresi gives another:

[If the length of time from physical impact until onset of fear delineated the rule of fear recovery,] liability would exist, for example, in cases involving tampering with popular over-the-counter remedies. In such cases, were the "immediacy" requirement deemed to be a purely temporal one, everyone who had taken the particular drugs could recover for fear of poisoning, even though the likelihood of such poisoning was extremely small. For the physical harm, if it occurred, would almost certainly happen quickly. Yet it was just this kind of expansive liability that the *Gottshall* Court sought to avoid.¹⁷⁰

Calabresi believes the fright limitation is not only baseless and arbitrary, but unlikely to be successful. He asserts (in politely deferential prose) that a fear test must instead focus on *risks of physical harm*:

¹⁶⁸ "[T]he general policy reasons to which *Gottshall* referred—in its explanation of why common-law courts have restricted recovery for emotional harm to cases falling within rather narrowly defined categories—militate against an expansive definition of 'physical impact.'" *Metro North*, 521 U.S. at 433.

¹⁶⁹ Justice Kennedy in his *Ayers* dissent *expressly* noted his discomfort with awarding damages for "brooding, contemplative fear." See *Ayers*, 538 U.S. at 172 (Kennedy, J., dissenting).

¹⁷⁰ *Nelson v. Metro-North Commuter R.R.*, 235 F.3d 101, 111 (2d Cir. 2000). Calabresi continues:

'[I]mmediate' might be read to create a purely temporal prerequisite for liability. . . . This reading would, of course, deny recovery under either prong of the [zone of danger] test to plaintiffs who suffer emotional distress due to the prospect of future physical injury from their employers' negligence, however likely such future injury may be. But, under this reading, the plaintiff before us—and others who face even a minimal, but temporally close physical risk—might very well survive summary judgment

...

We believe that such an interpretation of the [zone of danger] test would be incompatible . . . with *Gottshall's* desire to stem unbounded and uncertain recovery.

Id. (internal citations omitted).

[I]t is possible that immediacy does mean solely *temporal* immediacy, but that temporal immediacy, though a necessary condition, is not a sufficient condition for recovery for emotional harms. Under this reading, in order to recover, a plaintiff would have to show *both* temporal immediacy, *and that the risk of physical harm was also significant*. The difficulty with this reading of *Gottshall*, however, is that the Supreme Court, while not expressly precluding the possibility of additional prerequisites, gave no indication that it meant to add requirements other than immediacy or imminence before permitting recovery.¹⁷¹

The fright/fear dichotomy is breaking down for the same reason the original physical impact test was abandoned: it corresponds inadequately to *risks* of physical harm. (Are we starting to get the picture yet that fear liability must be based on properly identified, *epistemic risks*?) Courts are starting to realize this, and a new restriction—limiting recovery to “genuine and serious” fears—is emerging.

C. “Genuine & Serious” Fear

When *Gottshall* was at the appellate level, the Third Circuit decided to allow recovery if an individual could meet “a threshold assurance that there is a

¹⁷¹ *Id.* at 112 (emphasis added). Calabresi offered a second interpretation of the immediacy requirement that includes *spatial* immediacy:

A second possible reading of *Gottshall* is that when the Court used the term “immediate risk of physical harm,” it did not mean solely temporal immediacy, but rather, that it was using the term to connote a consideration of some degree of temporal closeness, some degree of spatial proximity, and some degree of likelihood and significance of physical harm. From this perspective, the question of whether a plaintiff is in “immediate risk of physical harm” becomes a complex one involving a number of different factors, of which temporality is one, and likelihood of physical harm another. Under such a test, the lower the risk, the more temporally close the possible physical harm must be, and vice versa. But even physical harms that are temporally highly proximate may fail to justify recovery if the likelihood of their occurring is small enough.

The difficulty with *this* reading is that the words “immediate” and “imminent” seem to sound predominantly in temporality. A broader reading of these terms is not, however, precluded either by the Supreme Court opinion in *Gottshall* or by ordinary usage of the terms themselves. That is, the words “immediate” and “imminent” do not, in fact, need to connote only temporal closeness.

Id.

Calabresi is fully correct that a second possible reading of *Gottshall* is possible—indeed, *spatial* immediacy is a consideration in bystander liability claims, which we discuss below in Part III.D. Regardless of whether a temporal, spatial, or combined interpretation of “immediacy,” is understood, Calabresi’s point is that fear claims should be associated with physical risks, not “immediacies.”

likelihood of *genuine and serious* emotional injury.”¹⁷² The *Gottshall* Supreme Court immediately rejected this test, believing that, without more, “genuine and serious” would be an unworkably subjective standard for fear liability.¹⁷³

Only nine years later, with eight of the same nine justices on the bench,¹⁷⁴ the *Ayers* Court adopted this very same “genuine and serious” test for emotional distress claims.¹⁷⁵ This remarkable turnabout happened because the Court is still in search¹⁷⁶ of a workable test that balances compensation for emotional harms victims with the need to prevent inundating fear liability from converting negligent tortfeasors to social insurers, or worse, bankrupting them.¹⁷⁷ Lacking a clear standard, the *Ayers* Court bought itself time, expressly leaving “genuine and

¹⁷² *Gottshall v. Consol. Rail Corp.*, 988 F.2d 355, 371 (3d Cir. 1993) (emphasis added). Under the Third Circuit’s test, a plaintiff’s claim that met this “genuine and serious” threshold would still have been “evaluated in light of traditional tort concepts such as breach of duty, injury, and causation, with the focus resting on the foreseeability of the plaintiff’s injury.” 512 U.S. at 550–51.

¹⁷³ The *Gottshall* Court noted:

[W]e question the viability of the genuineness test . . . [T]esting for the “genuineness” of an injury alone cannot appreciably diminish the possibility of infinite liability. . . . Judges would be forced to make highly subjective determinations concerning the authenticity of claims for emotional injury, which are far less susceptible to objective medical proof than are their physical counterparts. To the extent the genuineness test could limit potential liability, it could do so only inconsistently. . . . [W]e find such an arbitrary result unacceptable.

512 U.S. at 552.

¹⁷⁴ Justice Blackmun, who dissented in *Gottshall*, was replaced by Justice Breyer, who dissented in *Ayers*.

¹⁷⁵ *Ayers*, 538 U.S. at 157 (holding that asbestosis victims could recover emotional harm damages without proof of physical manifestations of disease “with an important reservation. . . . It is incumbent upon such a complainant . . . to prove that his alleged fear is genuine and serious.”) (citing *Coffman v. Keene*, 608 A.2d 416, 424–25 (N.J. Super. Ct. 1992), which allowed fear of cancer damages where judge had found plaintiff had “a genuine, real believable fear of cancer”).

¹⁷⁶ Uncertainty how to handle fear claims was evident in *Ayers*: “The ‘elephantine mass of asbestos cases’ lodged in state and federal courts, we again recognize, ‘defies customary judicial administration and calls for national legislation.’” *Ayers*, 538 U.S. at 166 (quoting *Ortiz v. Fibreboard Corp.*, 527 U.S. 815, 821 (1999)). While *Ayers* refers only to asbestos, the problems that underlie asbestos-related fear claims and “defy customary judicial administration” are typical of fear cases generally.

¹⁷⁷ *Ayers*, 538 U.S. at 169 (Kennedy, J., dissenting) (“Asbestos litigation has driven 57 companies, which employed hundreds of thousands of people, into bankruptcy, including 26 companies that have become insolvent since January 1, 2000. . . . With each bankruptcy the remaining defendants come under greater financial strain.”)

serious" undefined.¹⁷⁸ It remains to be seen how the phrase will serve as a delimiter for fear awards. But this does not prevent us from thinking about what this term of art *should* mean.

"Genuine" fear claims must be separated from *fraudulent* ones. This is a patently obvious requirement. Actually, "genuineness" is nothing new; private investigators and courts have long struggled to determine the credibility of professed fears.¹⁷⁹ The Supreme Court has admitted that while the evidentiary challenge of genuineness is sizeable, it is *not* the primary motivation behind its newest efforts to cabin emotional harms claims. Rather, the Court has sensed the existence of *another* concern—*completely unrelated to a fear's genuineness*—that has spawned the "serious" fear requirement. Courts have never properly identified this latter concern, referring to it only as "unpredictable and nearly infinite liability for defendants," the "risk of unlimited or unpredictable liability" or "the risk of a flood of emotional harm cases."¹⁸⁰ Yet these meaningless truisms

¹⁷⁸ See *id.* at 158 n.17 ("[Dissenting Justice Breyer] would specify . . . that the fear 'significantly and detrimentally affect the plaintiff's ability to carry on with everyday life and work.' . . . Th[at] definition . . . was not aired in the trial court or in this Court. . . . We therefore resist ruling on it today."); cf. *id.* at 187 (Breyer, J., dissenting) (proposing specific guidelines for proving a "genuine and serious fear" of cancer, including: (1) whether physical harm exists; (2) how close in time actual development of cancer can be predicted; (3) fear resulting from actual onset of cancer; (4) the incremental increase of the risk faced by all individuals and the degree to which it significantly and detrimentally affects the plaintiff's ability to carry on with every day life and work). Despite present ambiguity about this new standard, legal commentators have suggested that regardless of how "genuine and serious" will be defined, "future cases will need to adduce substantial evidence from a plaintiff of their state of mind and the basis for any fear as well as expert evidence of statisticians, doctors and psychiatrists." James L. Stengel & Michael J. Legg, *Fear of Cancer After the U.S. Supreme Court's Ayers Decision*, N.Y. L.J. 4, 7 (Aug. 14, 2003).

¹⁷⁹ *Gottshall*, 512 U.S. at 545 ("[E]motional injury when not related to any physical trauma may inundate judicial resources with a flood of . . . claims, many of which may be imagined or falsified . . .") (quoting *Maloney v. Conroy*, 545 A.2d 1059, 1061 (Conn. 1988)).

¹⁸⁰ The *Gottshall* Court noted:

[T]he potential for fraudulent and trivial claims . . . is only one of the difficulties created by allowing actions for negligently inflicted emotional distress. A more significant problem is the prospect that allowing such suits can lead to unpredictable and nearly infinite liability for defendants. . . . This concern . . . has nothing to do with the potential for fraudulent claims; on the contrary, it is based upon the recognized possibility of *genuine* claims from the essentially infinite number of persons, in an infinite variety of situations, who might suffer real emotional harm as a result of a single instance of negligent conduct. . . .

....

[T]esting for the 'genuineness' of an injury alone cannot appreciably diminish the possibility of infinite liability.

do not demonstrate *why* there will be unlimited liability. Still worse, courts confusingly conflate worries about genuineness with worries about other “mystery causes” of protracted fear claim “floods.”¹⁸¹

So what *does* cause worry of a flood, what *is* behind the “serious” requirement? As Part IV will make clear, courts (if they are to be honest) will have to accede that an adjective like “significant” or “serious” *tracks how likely it is that an epistemic risk of physical harm a plaintiff suffers at the hands of a negligent physical injurer will cause that victim or a bystander to become afraid.* (We will use the word “significant” instead of “serious” when we suggest in Sections IV.A and IV.B how to *objectively* identify such fears.)¹⁸²

D. Risk Perception From Personal Experience (Bystanders Only)

Risk perception is the key component to causing fear.¹⁸³ But risk perception (what some psychologists term “affect”) is also the key component to nearly all *other* forms of emotional harm—shock, dismay, etc. Indeed, neurobiologists, psychologists, and others are now recognizing that fear and “emotional distress” (a distinct, legally recognized cause of action, including harms such as shock, bereavement and consequent mental illnesses) spring from the same source—“affect” or “risk perception.” That is, people put at physical risk become “*afraid*” the same way bystanders witnessing others placed at physical risk become “*emotionally distressed*”: *through negative sensations associated with the perception of a cause-and-effect occurrence* (i.e., through risk perception).¹⁸⁴

Gottshall, 512 U.S. at 551–52; *see also* *S. Bakeries v. Knipp*, 852 So. 2d 712, 718 (Ala. 2003) (“Opening the courts generally for compensation for fear of future disease would be a dramatic change in the law and could engender significant unforeseen and unforeseeable consequences; awarding such compensation is better left to the Legislature.”); *McMillan v. Nat’l R.R. Passenger Corp.*, 648 A.2d 428, 436 n.9 (D.C. 1994) (“The standard for recovery under a theory of negligent infliction of emotional distress is more strict than under a theory of direct negligence because of . . . ‘the possibility of fraudulent claims that are difficult for judges and juries to detect, and the specter of unlimited and unpredictable liability.’”) (citations omitted).

¹⁸¹ *See Metro North*, 521 U.S. at 435 (asking “how can one determine from the external circumstance of exposure whether, or when, a claimed strong emotional reaction to an increased mortality risk (say, from 23% to 28%) is *reasonable and genuine* . . . ?”) (emphasis added); *Ayers*, 538 U.S. at 187 (Breyer, J., dissenting) (conflating risk-related considerations with genuineness of emotional harms claims under “genuine and serious” test standard).

¹⁸² We will also add a *third* requirement in Part IV.F for legally cognizable fears: that they require some degree of clinical medical attention to be recoverable.

¹⁸³ *See supra* Part II.C.

¹⁸⁴ Although we have referred to “fear” throughout this paper, the careful reader will notice that our conception of fear centers on *risk perception* (also called “affect”). *Affect*—a ubiquitous subconscious human response of immediately assigning a “preference” or “dislike” for any novel phenomenon—is what increasingly is being indicted as the driving force for

These new scientific findings indicate a *single* judicial test for assessing physical injurers' culpability should apply (1) to the claims of *all* emotional harm victims, be they bystanders or physically at-risk persons, and (2) be the claim for fear *or* emotional distress.¹⁸⁵ Judges, however, still think about risk perception *only* for bystanders' "emotional distresses." In contrast, the zone of danger test does not determine whether having been placed at physical risk (a precondition of fear recovery) has caused risk perception and, in turn, fear. As we contended in Parts II.C and II.D, this deficit must be remedied if fear claims are to be correctly assessed.

But by contending a single unifying test should apply to at-risk individuals *and* bystanders for fear *and* emotional distress claims, we are not advocating that courts simply universalize currently tangled bystander tests of risk perception. That would be folly, as current bystander tests do not correctly reflect the neurobiological manner in which risks are perceived. Beyond that, a considerable problem with these tests is that they focus on risk perceptions stemming from personal experiences. Part II.D, however, evidenced that most risk perceptions are now media-spawned. Present bystander standards, like the zone of danger test, are thus addressing only a trivial and antiquated source of risk perception and emotional distress/fear. Let us examine those standards now to see why this is true.

Like the zone of danger test, most states restrict bystander claims to emotional harms that result from witnessing *actual* serious physical injury or death.¹⁸⁶ However, for erroneous death telegrams¹⁸⁷ and mishandling of

emotional responses. While we hinted at this concept in Part II.D, the interested reader wishing a more detailed synopsis of affect theory can consult the following: ANTONIO DAMASIO, *DESCARTES' ERROR: EMOTION, REASON, AND THE HUMAN BRAIN* (1994); Paul Slovic et al., *Risk as Analysis and Risk as Feelings: Some Thoughts about Affect, Reason, Risk, and Rationality*, 24 *RISK ANALYSIS* 311 (2004); Paul Slovic et al., *The Affect Heuristic*, in *INTUITIVE JUDGMENT: HEURISTICS AND BIASES* (T. Gilovich et al. eds. 2002); accord Hein T. van Schie et al., *Modulation of Activity in Medial Frontal and Motor Cortices During Error Observation*, 7 *NATURE NEUROSCI.* 549, 549 (2004) (finding that task execution is influenced by observation of other people's performance errors and successes, implying that "neural mechanisms are involved in monitoring one's own actions *and the actions of others*") (emphasis added); Friderike Heuer & Daniel Reisberg, *Vivid Memories of Emotional Events: The Accuracy of Remembered Minutiae*, 18 *MEMORY & COGNITION* 496 (1990) (indicating that subjects think about observed emotional events in more *personal*, less abstract or schematic way than neutral events).

¹⁸⁵ The exception to this single emotional-rule proposal is that claims based on *bereavement* could properly add a requirement that limit emotional recovery to close family members of a physically injured person.

¹⁸⁶ See *infra* notes 212–18.

relatives' corpses,¹⁸⁸ many state courts allow for emotional distress recovery even though no one suffers physical injury or death. More dramatically, Montana has a general bystander rule that allowed one plaintiff to recover emotional damages after the defendants misinformed police that she had stolen property.¹⁸⁹

¹⁸⁷ See, e.g., *Mentzer v. W. Union Tel. Co.*, 62 N.W. 1, 6 (Iowa 1895); *Russ v. W. Union Tel. Co.*, 23 S.E.2d 681, 682 (N.C. 1943).

¹⁸⁸ See, e.g., *Brown Funeral Homes & Ins. Co. v. Baughn*, 148 So. 154, 155 (Ala. 1933); *Brown v. Matthews Mortuary, Inc.*, 801 P.2d 37, 47 (Idaho 1990); cf. *Christensen v. Superior Court*, 820 P.2d 181, 196 (Cal. 1991) (basing NIED recovery on special duty resulting from breach of contract to preserve deceased's body); *Chelini v. Nieri*, 196 P.2d 915, 916 (Cal. 1948) (same). The majority rule for mishandled corpses, however, still awards recovery only for intentional mistreatment of the body. See *Fuller v. Marx*, 724 F.2d 717, 719 (8th Cir. 1984) (applying Arkansas law); *Washington v. John T. Rhines Co.*, 646 A.2d 345, 350 (D.C. 1994); *Burgess v. Perdue*, 721 P.2d 239, 245 (Kan. 1986); *Daniels v. Adkins Protective Serv., Inc.*, 247 So. 2d 710, 711 (Miss. 1971); cf. *Dawson v. Wilheit*, 737 P.2d 93, 95 (N.M. Ct. App. 1987) (rejecting bystander liability because no physical injury occurred where police impounded murderer's vehicle with corpse in trunk, failed to effect a proper inventory search, and returned the vehicle to the murderer who hid the body, which was only discovered six months later). Although death telegram and corpse mishandling NIED cases are narrowly cabined modes of effecting emotional harm, they are conceptually indistinguishable from a general rule permitting bystanders to recover for fear or emotional distress in the complete absence of any person's physical injury. See, e.g., *Bailey v. Long*, 90 S.E. 809, 810 (N.C. 1916). The court in *Bailey* noted that

[w]e see no reason why, if the husband can recover damages from a telegraph company for mental anguish for delay in delivering a telegram informing him of his wife's illness, he should not recover for the mental anguish occasioned by witnessing her suffering and death against the alleged author of such suffering and death.

Id.

¹⁸⁹ *Sacco v. High Country Indep. Press, Inc.*, 896 P.2d 411, 425 (Mont. 1995) ("A cause of action for negligent infliction of emotional distress will arise under circumstances where serious or severe emotional distress to the plaintiff was the reasonably foreseeable consequence of the defendant's negligent act or omission.") (citing *Rodrigues*, 472 P.2d at 519-20). Notice that Montana's broad rule recognizes emotional harms stemming from *damaging information*. By recognizing emotional harms other than those resulting from threat of physical injury, Montana has cast doubt on the usual distinction between zone of danger and bystander plaintiffs. *Accord Little v. York County Earned Income Tax Bureau*, 481 A.2d 1194, 1201 (Pa. Super 1984) (stating that woman incarcerated for failure to pay income taxes can recover from negligent tax bureau for faulty tax advice); cf. *Fanelle v. LoJack Corp.*, 79 F. Supp. 2d 558, 565 (E.D. Pa. 2000) (applying Pennsylvania law) (denying wife's bystander NIED claim stemming from public distribution of newspaper article reprint that reported that her husband had been arrested for several car thefts, where husband had already been found not guilty at trial).

Somewhat related to Montana's rule, a Supreme Court case once upheld a state's *group* libel criminal law, holding that racially charged literature not directed at any particular person could still "have a powerful emotional impact on those to whom it was presented." *Beauharnais*

Generally, however, states that offer bystander liability have adopted some variant of the guidelines set out in 1968 in *Dillon v. Legg*,¹⁹⁰ a California Supreme Court case.¹⁹¹ *Dillon* held that emotional distress recovery should turn on whether a defendant could have "reasonably foreseen" a plaintiff's emotional injury. It permits *bystanders* to recover for their emotional injuries stemming from *witnessing* harm to a third party.

Dillon's "reasonable foreseeability" test considers three factors:¹⁹² (1) spatial and (2) temporal proximities of the plaintiff to the accident, and (3) how close a relationship the victim sustaining the physical injury and the bystander plaintiff had previously had.¹⁹³ In curious contrast with zone of danger cases, however,

v. Illinois, 343 U.S. 250, 261 (1952). Insofar as anyone belonging to the slighted racial group could be considered a "bystander" to emotionally damaging information, the Court's logic is consistent with Montana's recent decision to predicate bystander emotional recoveries on damaging information alone.

¹⁹⁰ 441 P.2d 912, 920 (Cal. 1968).

¹⁹¹ See, e.g., *Croft v. Wicker*, 737 P.2d 789, 791 (Alaska 1987); *Tommy's Elbow Room, Inc. v. Kavorkian*, 727 P.2d 1038, 1041 (Alaska 1986); *Clohessy v. Bachelor*, 675 A.2d 852, 855 (Conn. 1996); *Zell v. Meek*, 665 So. 2d 1048, 1052 (Fla. 1995); *Fineran v. Pickett*, 465 N.W.2d 662, 663 (Iowa 1991); *Lejeune v. Rayne Branch Hosp.*, 556, 564 So. 2d 559 (La. 1990); *Cameron v. Pepin*, 610 A.2d 279, 281 (Me. 1992); *Culbert v. Sampson's Supermarkets, Inc.*, 444 A.2d 433, 435 (Me. 1982); *Dziokonski v. Babineau*, 380 N.E.2d 1295, 1300 (Mass. 1978); *Entex, Inc. v. McGuire*, 414 So. 2d 437, 444 (Miss. 1982); *Maguire v. State*, 835 P.2d 755, 761 (Mont. 1992); *James v. Lieb*, 375 N.W.2d 109, 113 (Neb. 1985), *modified by* *Vosburg v. Cenex-Land O'Lakes Agronomy Co.*, 513 N.W.2d 870, 873 (Neb. 1994); *State v. Eaton*, 710 P.2d 1370, 1375-78 (Nev. 1985); *Wilder v. Keene*, 557 A.2d 636, 638 (N.H. 1989); *Portee v. Jaffee*, 417 A.2d 521, 526 (N.J. 1980); *Fernandez v. Walgreen Hastings Co.*, 968 P.2d 774, 777 (N.M. 1998) (emphasizing that bystander NIED liability is "extremely narrow"); *Johnson v. Ruark Obstetrics and Gynecology Assocs.*, 395 S.E.2d 85, 89 (N.C. 1990); *Sinn v. Burd*, 404 A.2d 672, 685 (Pa. 1979); *Reilly v. United States*, 547 A.2d 894, 895 (R.I. 1988); *Kinard v. Augusta Sash & Door Co.*, 336 S.E.2d 465, 467 (S.C. 1985); *Ramsey v. Beavers*, 931 S.W.2d 527, 531 (Tenn. 1996); *Boyles v. Kerr*, 855 S.W.2d 593, 598 (Tex. 1993); *Gain v. Carroll Mill Co.*, 787 P.2d 553, 556 (Wash. 1990); *Roitz v. Kidman*, 913 P.2d 431, 433 (Wyo. 1996); *Helderth v. Marrs*, 425 S.E.2d 157, 162 (W.Va. 1992). *But see infra* note 254.

¹⁹² The exact phrasing of *Dillon*'s requirements is:

Whether plaintiff was located near the scene of the accident as contrasted with one who was a distance away from it. (2) Whether the shock resulted from a direct emotional impact upon plaintiff from the sensory and contemporaneous observance of the accident, as contrasted with learning of the accident from others after its occurrence. (3) Whether plaintiff and the victim were closely related, as contrasted with an absence of any relationship or the presence of only a distant relationship.

441 P.2d at 920.

¹⁹³ Just as in zone of danger cases, several states also maintain a fourth *Dillon* requirement—that the psychic harm a bystander sustains *result in* a physical injury or manifestation. *Champion v. Gray*, 478 So. 2d 17, 20 (Fla. 1985), *modified by* *Zell v. Meek*, 665

numerous *Dillon* jurisdictions do not require expert testimony regarding the “genuineness” of bystanders’ professed emotional harm,¹⁹⁴ although most require that the bystander suffer “severe” emotional distress.¹⁹⁵

Variation in the application of *Dillon*’s three prongs is considerable. Some states claim to reject *Dillon* and maintain only a zone of danger test, yet they offer bystander liability. What these courts have done is to narrowly read *Dillon*’s temporal and spatial limitations so only certain bystanders *within the zone of danger* can recover emotional damages resulting from witnessing a physical harm *to another*.¹⁹⁶

So. 2d 1048, 1054 (Fla. 1995); *Barnhill v. Davis*, 300 N.W.2d 104, 107–08 (Iowa 1981) (“While we recognize that mental distress may exist without objective physical symptoms, compensable mental distress should ordinarily be accompanied with physical manifestations of the distress.”); *cf.* *Molien v. Kaiser Found. Hosps.*, 616 P.2d 813, 820 (Cal. 1980) (abolishing this requirement); *Migliori v. Airborne Freight Corp.*, 690 N.E.2d 413, 415 (Mass. 1998) (same).

¹⁹⁴ See *Craighead v. Preferred Risk Mut. Ins. Co.*, 769 So. 2d 112, 123 (La. Ct. App. 2000) (holding plaintiff’s testimony that he had sought professional mental health counseling sufficient to establish genuine emotional distress); *Krysmalski v. Tarasovich*, 622 A.2d 298 (Pa. Super. 1993). *But see* *Hegel v. McMahon*, 960 P.2d 424, 430 (Wash. 1998) (requiring expert testimony and medical diagnosis to prove genuineness of bystander psychic injury).

¹⁹⁵ The North Carolina Supreme Court has defined “severe” emotional distress as “any emotional or mental disorder, such as, for example, neurosis, psychosis, chronic depression, phobia, or any other type of severe and disabling emotional or mental condition which may be generally recognized and diagnosed by professionals trained to do so.” In contrast, “mere temporary fright, disappointment or regret will not suffice.” *Johnson v. Ruark Obstetrics & Gynecology Assoc., P.A.*, 395 S.E.2d 85, 97 (N.C. 1990); *see also* *Paugh v. Hanks*, 451 N.E.2d 759, 765 (Ohio 1983) (similar definition); *Marzolf v. Stone*, 960 P.2d 424, 431 n.5 (Wash. 1998) (“[E]xamples of emotional distress would include neuroses, psychoses, chronic depression, phobia, shock, post traumatic stress disorder, or any other disabling mental condition.”). Some courts questionably require only trivial proof of “severe” emotional harm. *See* *Barnhill v. Davis*, 300 N.W.2d 104, 107–08 (Iowa 1981) (holding that pain in plaintiff’s legs and back, difficulty in sleeping, and dizziness demonstrates “serious” emotional harm); *LaCour v. Safeway Ins. Co.*, 676 So. 2d 761, 764 (La. Ct. App. 1996) (stating that children who show poor academic performance and sleeping difficulties satisfy requirement of “severe” emotional distress, even when they did not see mental health counselor). *But see* *Johnson v. Scott*, 528 S.E.2d 402, 405 (N.C. Ct. App. 2000) (holding loss of appetite and difficulty sleeping not to be “severe” distress).

¹⁹⁶ *Bloom v. Consd. Rail Corp.*, 41 F.3d 911, 916 (3d Cir. 1994) (finding no recovery under FELA for train engineer whose train struck and killed a pedestrian and driver on separate occasions, but who was never in a zone of danger himself); *Pierce v. Casas Adobes Baptist Church*, 782 P.2d 1162, 1165 (Ariz. 1989) (holding no bystander recovery outside zone of danger); *Lee v. State Farm Mut. Auto. Ins. Co.*, 533 S.E.2d 82, 86–87 (Ga. 2000) (holding that mother sustaining own serious injuries in car accident can make bystander NIED claim for daughter’s death); *Seef v. Sutkus*, 583 N.E.2d 510, 511 (Ill. 1991); *Williams v. Baker*, 572 A.2d 1062, 1066 (D.C. 1990); *Pekin Ins. Co. v. Hugh*, 501 N.W.2d 508, 511 (Iowa 1993) (permitting

Other *Dillon* adherents have more relaxed standards of spatial and temporal "immediacy." Some of these require that the plaintiff witness the accident as it transpires.¹⁹⁷ Distance from the accident site sometimes is used to gauge how much the plaintiff has been affected by the accident's graphic details.¹⁹⁸ Some instead assert the plaintiff need not contemporaneously witness the accident, but must personally happen upon the immediate aftermath at the accident site,¹⁹⁹

extremely narrow altruistic fear recovery test where, among other requirements, "[t]he bystander and the victim were husband and wife or related within the second degree of consanguinity or affinity" and "[a] reasonable person in the position of the bystander would believe, and the bystander did believe, that the direct victim of the accident would be seriously injured or killed"); *Stadler v. Cross*, 295 N.W.2d 552, 555 (Minn. 1980) (no recovery for parents outside zone of danger witnessing son struck by truck); *Asaro v. Cardinal Glennon Mem'l Hosp.*, 799 S.W.2d 595, 599-600 (Mo. 1990) (allowing bystanders in zone of danger to recover for emotional distress for witnessing third-party "injury producing, sudden event"); *Whetham v. Bismarck Hosp.*, 197 N.W.2d 678, 684 (N.D. 1972) (denying bystander damages to mother who witnessed her baby dropped on tiled hospital floor); *Trombetta v. Conkling*, 626 N.E.2d 653, 654 (N.Y. 1993) (limiting bystander fear recovery to zone of danger); *Nielson v. AT & T Corp.*, 597 N.W.2d 434, 440 (S.D. 1999); *Vaillancourt v. Med. Ctr. Hosp.*, 425 A.2d 92, 95 (Vt. 1980) (denying bystander recovery for husband whose baby died in labor); *Hale v. Morris*, 725 P.2d 26, 28 (Co. Ct. App. 1986) (denying bystander recovery unless personally subjected to unreasonable risk of bodily harm); *James v. Harris*, 729 P.2d 986, 988 (Co. Ct. App. 1986) (denying bystander recovery for mother who watched her child run over by car); see also RESTATEMENT (SECOND) OF TORTS, § 313(2).

¹⁹⁷ *Andrade v. Chojnacki*, 65 F. Supp. 2d 431, 465 (W.D. Tex. 1999) (holding in Branch-Dividians survivor case that "Texas law still requires the bystander's presence when the injury occurred and the contemporaneous perception of the accident.") (quoting *United Servs. Auto. Ass'n v. Keith*, 970 S.W.2d 540, 542 (Tex. 1998)); *Thing v. La Chusa*, 771 P.2d 814, 815 (Cal. 1989); *Johnson v. Jamaica Hosp.*, 467 N.E.2d 502, 503 (N.Y. 1984) (granting no NIED recovery for parents whose newborn child was abducted from hospital where parents did not view abduction and were not within the zone of danger); *Mazzagatti v. Everingham*, 516 A.2d 672, 679 (Pa. 1986). The court in *Mazzagatti* stated:

We believe that where the close relative is not present at the scene of the accident, but instead learns of the accident from a third party, the close relative's prior knowledge of the injury to the victim serves as a buffer against the full impact of observing the accident scene. By contrast, the relative who contemporaneously observes the tortious conduct has no time span in which to brace his or her emotional system.

Id.

¹⁹⁸ *Oутten v. Nat'l R.R. Passenger Corp.*, 928 F.2d 74, 78 (3d Cir. 1991) (rejecting bystander claim because plaintiff "was at least a full mile from the point where the passenger train collided with the ballast regulator, and he witnessed neither the initial impact nor the individual injuries.").

¹⁹⁹ *Cameron v. Pepin*, 610 A.2d 279, 284 (Me. 1992) (denying recovery for parents seeing injured adult son in emergency room); *Stockdale v. Bird & Son, Inc.*, 503 N.E.2d 951, 953-54 (Mass. 1987) (granting no recovery where mother saw son's body in funeral home

occasionally holding that this disturbing encounter must occur *before* emergency medical personnel arrive.²⁰⁰ A few courts recognize that shock or fright might be compensable even if the plaintiff does not witness the victim's harms until a time well after the initial exposure/injury, such as when the victim is discovered, has arrived at a hospital, or has had a latent injury manifest itself.²⁰¹ And although it

twenty-four hours after his death); *Miles v. Edward O. Tabor, M.D., Inc.*, 443 N.E.2d 1302, 1305-06 (Mass. 1982) (denying recovery for mother who developed severe emotional distress upon baby's death, which occurred two months after defendant's tortious act); *Dziokonski v. Babineau*, 380 N.E.2d 1295, 1302 (Mass. 1978) (allowing bystander recovery if "witnesses the accident or soon comes on the scene while the [victim] is still there."); *Gardner v. Gardner*, 435 S.E.2d 324, 328 (N.C. 1993) (rejecting bystander claim where parent saw failed resuscitative efforts at hospital); *Wilder v. City of Keene*, 557 A.2d 636, 639 (N.H. 1989) (refusing to expand liability for bystander parents who did not witness the accident but observed their child in extremis at hospital); *Nutter v. Frisbie Mem'l Hosp.*, 474 A.2d 584, 585 (N.H. 1984) (refusing to expand bystander liability for parents who reached hospital after their child died); *Portee v. Jaffee*, 417 A.2d 521, 528 (N.J. 1980); *Contreras v. Carbon County Sch. Dist. No.1*, 843 P.2d 589, 590 (Wyo. 1992) (granting no bystander recovery for mother seeing injured son who had been removed from playground to the principal's office and was lying on a cot); *Gates v. Richardson*, 719 P.2d 193, 199 (Wyo. 1986) ("[T]he plaintiff can recover if he observed the infliction of serious bodily harm or death, or if he observed the serious bodily harm or death shortly after its occurrence but without material change in the condition and location of the victim.").

²⁰⁰ *Gabaldon v. Jay-Bi Prop. Mgmt.*, 925 P.2d 510, 514 (N.M. 1996).

²⁰¹ *Ferriter v. Daniel O'Connell's Sons, Inc.*, 413 N.E.2d 690, 697 (Mass. 1980) (upholding bystander NIED claim for wife and children who did not see paralyzed husband until well after accident at hospital), *statutorily overturned by* MASS. ANN. LAWS. ch. 152 § 24 (Law. Co-op. 2000) (barring common law actions brought by other parties for the loss of the injured worker's "consortium, parental guidance, companionship or the like."); *Vosburg v. Cenex-Land O'Lakes Agronomy Co.*, 513 N.W.2d 870, 873 (Neb. 1994). The court in *Vosburg* stated:

The determination of foreseeability requires consideration of the nature of a plaintiff's shock in terms of where, when, and how the injury to the third person entered into a plaintiff's consciousness. This is virtually always met when the plaintiff personally observes the injury to the victim. Moving away from that most obvious end of the spectrum is the case where the plaintiff rushes to the hospital to find a seriously injured or dead victim or hears of such injury or death in a shocking manner.

Id.; *Sanchez v. Schindler*, 651 S.W.2d 249, 253-54 (Tex. 1983) (granting damages for mental anguish where parents learned second-hand of fatally wounded son's injuries, went to hospital and were prevented from entering operating room, but saw son's bloodied legs through slit in door); *Rodriguez v. Cambridge Hous. Auth.*, No. 954904 1998 WL 1184158 at *8 (Mass. Super. Ct. Apr. 17, 1998) (awarding bystander damages to boy who discovered mother left gagged and tied up by robber in closet, became suicidal, and admitted to hospital for two weeks for a major depressive episode). Texas later backtracked on its expansive bystander approach without formally overruling it. *See United Servs. Auto. Ass'n v. Keith*, 970 S.W.2d 540, 542 (Tex. 1998) (denying recovery for mother awoken and informed of daughter's car crash after

insists it generally rejects allowing "remote" bystanders to recover for fear or emotional harms resulting from media reports, the California Supreme Court has allowed close family members who learned exclusively from a televised news report of alleged mishandling of their loved ones' bodies years earlier to make out bystander claims against a contractually-bound mortuary.²⁰²

For courts that extend bystander liability beyond the zone of danger, this relative laxity is compensated for by stingily limiting recovery to close family,²⁰³ sometimes just to nuclear family members.²⁰⁴ In a younger countertrend,

hearing fatally injured daughter's moans at crash scene); *Freeman v. Pasadena*, 744 S.W.2d 923, 923 (Tex. 1988) (holding that a stepfather, who heard about a vehicle accident second-hand and drove to scene, saw one bloody stepson with broken arm on gurney, while second stepson had already been transported to hospital, could not recover for emotional shock stemming from injuries to *either* of two stepsons).

²⁰² *Christensen v. Superior Court*, 54 Cal. 3d 868, 901-02 (1991) (finding where a close family member has a "well-founded substantial certainty" based exclusively on media reports that "'their' decedents had been improperly treated," a prima facie case of NIED causality has been made, but also cautioning that "[m]edia reports of a *general* pattern of misconduct are not sufficient, in and of themselves, to establish . . . defendants' misconduct.") (emphasis added). *But see* *Ledford v. Delta Airlines, Inc.*, 658 F. Supp. 540, 543 (S.D. Fla. 1987) (holding that husband who learns from the news that his wife's plane has crashed cannot recover, because "[i]n order to be directly involved in the event, the plaintiff must 'see' or 'hear' the accident, or 'arrive upon the scene while the injured party is still there'"); *Gain v. Carroll Mill Co., Inc.*, 787 P.2d 553, 557 (Wash. 1990) (denying bystander recovery for father and brother who saw evening news report of accident).

²⁰³ *See, e.g.,* *Wilson v. United States*, 190 F.3d 959, 962 (9th Cir. 1999) (applying California law) (holding that friend cannot recover for bystander NIED); *Croteau v. Olin Corp.*, 704 F. Supp. 318, 320 (D.N.H. 1989), *aff'd*, 884 F.2d 45, 46 (1st Cir. 1989) (holding that first cousins cannot recover); *Sollars v. City of Albuquerque*, 794 F. Supp. 360, 363-64 (D.N.M. 1992) (applying New Mexico law) (holding that eight year cohabiting girlfriend who had bore victim's daughter could not recover); *Elden v. Sheldon*, 758 P.2d 582, 588 (Cal. 1988) (finding no recovery for unmarried, unengaged cohabitant); *Walker v. Clark Equip. Co.*, 320 N.W.2d 561, 563 (Iowa 1982) (finding sister can recover for witnessing brother's death); *Portee v. Jaffee*, 417 A.2d 521, 528 (N.J. 1980) (holding that parent can recover for witnessing child's death); *Trombetta v. Conkling*, 626 N.E.2d 653, 654-55 (N.Y. 1993) (denying bystander recovery for niece); *Hislop v. Salt River Project Agric. Improvement & Power Dist.*, 5 P.3d 267, 270-72 (Ariz. Ct. App. 2000) (finding co-worker and friend cannot recover); *Moon v. Guardian Postacute Servs., Inc.*, 116 Cal. Rptr. 2d 218, 219 (Cal. Ct. App. 2002) (denying recovery for plaintiff son-in-law); *Trapp v. Schuyler Const.*, 197 Cal. Rptr. 411, 412 (Cal. Ct. App. 1983) (barring recovery as matter of law for first cousins, friends, or housemates). *See generally* Dale Joseph Gilsinger, Annotation, *Relationship Between Victim and Plaintiff-Witness as Affecting Right to Recover Under State Law for Negligent Infliction of Emotional Distress Due to Witnessing Injury to Another Where Bystander Plaintiff is Not Member of Victim's Immediate Family*, 98 A.L.R.5th 609 (2002).

²⁰⁴ *See* 38 AM. JUR. 2D, *Fright, Shock, and Mental Disturbance*, § 29; *see also* LA. CIV. CODE ANN. art. 2315.6 (West 1997) (limiting NIED bystander recovery to spouse, children,

however, recovery is being permitted if the plaintiff and victim had an existing relationship that was functionally and emotionally equivalent to being nuclear family members.²⁰⁵ Courts have held the line fairly firmly at this “functional equivalence” standard.²⁰⁶ *Acquaintances* (e.g., neighbors, co-workers or non-romantic friends) rarely recover bystander damages even if they themselves are in the same zone of danger²⁰⁷ or have sensory perception of the accident as it

parents, siblings, grandchildren, and grandparents of the injured or deceased person.)

²⁰⁵ See *Sullivan v. Ford Motor Co.*, No. 97CIV0593(RCC) 2000 WL 343777, at *10 (S.D.N.Y. Mar. 31, 2000) (applying New York law) (granting recovery for aunt who was also legal guardian); *Leong v. Takasaki*, 520 P.2d 758, 765–66 (Haw. 1974) (allowing plaintiff who observed injury to stepgrandmother to recover because of atypically strong and extended ties in Hawaiian families); *State ex rel. DOT v. Hill*, 963 P.2d 480, 483 (Nev. 1998) (stating that “Ora Lee and Earnestine were more than in-laws, they were best and dearest of friends for almost forty years,” the court continued by saying that “Ora Lee was closer to Earnestine than to her own sisters. We believe that to preclude Ora Lee from recovery for the shock of witnessing the death of such a loved one for want of a legal or blood relationship would be the height of ‘hopeless artificiality.’”), *overruled by* *Grotts v. Zahner*, 989 P.2d 415, 416 n.1 (Nev. 1999) (finding no bystander liability if unrelated parties or for “[f]amily relationships beyond the first degree of consanguinity”); *Graves v. Estabrook*, 818 A.2d 1255, 1261 (N.H. 2003) (“[T]o foreclose [an unmarried cohabitant] from making a claim based upon emotional harm because her relationship with the injured person does not carry a particular label is to work a potential injustice.”) (quoting *Dunphy v. Gregor*, 642 A.2d 372, 378 (N.J. 1994) (holding that fiancée who had been 2.5 year cohabitant could recover, because “at time of the injury, [the couple’s relationship] [wa]s deep, lasting, and genuinely intimate.”)); *Mobaldi v. Regents of Univ. of California*, 127 Cal. Rptr. 720, 722 (Cal. Ct. App. 1976) (finding bystander liability where foster mother treated like actual mother and tortfeasor knew of close relationship), *disapproved on other grounds*, *Baxter v. Superior Court*, 563 P.2d 871 (Cal. 1977).

²⁰⁶ At the farther end of this “functional familial equivalence” spectrum, one court has recognized a bystander claim of a betrothed plaintiff who did not cohabit with the victim after he witnessed her physically accosted. *Magruder v. Sawyer*, No. Civ. 99-077-8, 1999 WL 33117074, at *1 (D. Me. Dec. 6, 1999) (applying Maine law). *But see* *Reynolds v. State Farm Mut. Auto. Ins. Co.*, 611 So. 2d 1294, 1296 (Fla. Dist. Ct. App. 1992) (granting no recovery where the decedent was the plaintiff’s steady boyfriend of over six years and the plaintiff referred to the decedent as her fiancé, but couple had not exchanged rings, had not set wedding date, and did not have joint financial commitments).

²⁰⁷ *Maldonado v. Nat’l Acme Co.*, 73 F.3d 642, 645–46 (6th Cir. 1996) (applying Michigan law) (denying bystander claim because plaintiff was only a co-worker, but reversing summary judgment for defendant because plaintiff’s claim could be interpreted as *direct* emotional harm claim because plaintiff too was in zone of danger and possibly at personal risk of harm); *O’Cain v. Harvey Freeman and Sons, Inc. of Miss.*, 603 So. 2d 824, 830 (Miss. 1991) (finding no bystander liability because woman tenant did not witness roommate’s rape in adjacent room, but allowed to proceed with zone of danger claim). Courts sometimes circumvent the strict *Dillon* relationship prong when circumstances clearly would warrant bystander recovery, had the parties been closer related. *Accord* *Kately v. Wilkinson*, 195 Cal. Rptr. 902, 907–09 (Cal. Ct. App. 1983) (denying bystander NIED claims, but allowing mother and daughter whose motorboat steering column locked and dismembered “loved” friend who

occurs.²⁰⁸ But a few courts have gone to the utmost extreme of either implying or expressly opining that *strangers* may recover for bystander harms, perhaps even if the bystanders are not in the zone of danger themselves, with *Dillon's* third prong operating to limit the *dollar amount of*, not liability for, emotional damages.²⁰⁹

was waterskiing to sue manufacturer for "direct" emotional harm resulting from use of defective product).

²⁰⁸ *Althoff v. Consol. Rail Corp.*, No. 87-4384, 1988 WL 61734, at *1 (E.D. Pa. Jun. 13, 1988) (allowing bystander recovery for crane operator whose crane killed a co-worker). *But see* *Goldberg v. Mallinckrodt, Inc.*, 792 F.2d 305, 310 (2d Cir. 1986) (applying New York law) (denying recovery for orthopedic surgeon who observed adverse reaction two patients suffered due to dye of defendant manufacturer); *Michaud v. Great N. Nekoosa Corp.*, 715 A.2d 955, 960 (Me. 1998) (denying recovery for professional diver who futilely attempted to rescue fellow divers repairing a dam); *Nugent v. Bauermeister*, 489 N.W.2d 148, 150 (Mich. Ct. App. 1992) (denying recovery for child who witnessed best friend's fatal injury in vehicle/bicycle accident); *Smith v. Kings Entm't Co.*, 649 N.E.2d 1252, 1253 (Ohio Ct. App. 1994) (denying recovery for non-romantic friend who urged electrocution victim to jump into electrically charged fountain to save another electrocution victim); *Bray v. Marathon Corp.*, 553 S.E.2d 477, 481 (S.C. Ct. App. 2001) (barring recovery for witnessing injury to fifteen year old co-worker); *Batista v. Backus*, CV 000159533, 2000 Conn. Super. LEXIS 3160, at *4 (barring recovery by victim's friend); *Eyrich for Eyrich v. Dam*, 473 A.2d 539, 547 (N.J. App. Div. 1984) The court in *Eyrich* denied recovery for a neighbor who witnessed a five-year-old boy she had been guardian of for the first six months of his life attacked and killed by a circus leopard. However, the court noted that if precedent were otherwise, the outcome might have been different:

In our view when a person who has been entrusted with the temporary care of a child witnesses the child's accidental death or critical injury and knows he cannot return the child safely to his parents, his remorse, no matter how blameless he may have been, necessarily imposes an excruciating and wrenching burden of guilt.

Id.; *Casale v. Unipunch, Inc.*, 177 A.D.2d 1029, 1029 (N.Y. Sup. Ct. 1991) (denying recovery for witnessing electrocution of friend/co-worker).

²⁰⁹ *Althoff*, 1988 WL 61734, at *2 (stating in dicta that if a non-negligent driver were to strike an unacquainted child darting across the street, thus making himself an active participant in causing the injury, it could be possible to recover bystander emotional damages); *Lourcey v. Estate of Scarlett*, No. M2002-00995-COA-R3-CV, 2003 Tenn. App. LEXIS 477, at *6 (Tenn. Ct. App. Jul. 8, 2003) (holding that postal worker can recover for emotional harm after being flagged down by stranger who asked her to dial 911, then shot and killed his wife and himself) (citing *Thurmon v. Sellers*, 62 S.W.3d 145, 164 (Tenn. Ct. App. 2001) (allowing stranger to recover for witnessing injury to another in an accident he too was involved in because "the nature of the plaintiff's relationship with the third party should play a pivotal role in determining the *amount* of damages to award, rather than being a prerequisite for establishing foreseeability")). Most courts have rejected the *Sellers* holding. Indeed, even where an injured or deceased victim is mistaken for a loved one, courts will not award bystander damages. *Accord Barnes v. Geiger*, 446 N.E.2d 78, 81 (Mass. Ct. App. 1983) (denying bystander recovery for estate of a mother who died from shock upon witnessing the fatal injury of a person she

Other courts have rejected bystander liability outright.²¹⁰ Strikingly, there is exactly one uniform justification for these dismissals and the generally draconian application of *Dillon's* restrictions: worry that bystander liability leads to an "infinite flood" of litigation.²¹¹ As one court rejecting bystander recovery for strangers has noted, the reason most courts tout some *Dillon* variant "is in fair

mistakenly believed to be her child); *Browning v. Vandergriff*, No. E1999-02711-COA-R3-CV, 2001 Tenn. App. LEXIS 41, at *8 (Tenn. Ct. App. Jan. 22, 2001) (precluding bystander recovery where woman mistook man shot in her front yard for her grandson). *See generally* *Outten v. National R.R. Passenger Corp.*, 928 F.2d 74, 78 (3d Cir. 1991) (rejecting bystander claim in part because "none of the passengers aboard the train were related to [the plaintiff]; those individuals injured were complete strangers."); *Ball v. Prentice*, 781 P.2d 628, 630 (Ariz. Ct. App. 1989) (denying recovery for strangers); *Clomon v. Monroe City Sch. Bd.*, 572 So. 2d 571, 575 (La. 1990) (denying recovery for plaintiff driver against school district after inadvertently striking unknown child who had darted across the street in front of his car after school bus negligently deactivated caution light); *Migliori v. Airborne Freight Corp.*, 690 N.E.2d 413, 418 (Mass. 1998) (finding the fact that stranger was also attempted rescuer does not compel reconsideration of denied NIED recovery); *Lingle v. Berrien County*, 522 N.W.2d 641, 641-42 (Mich. App. 1994) (denying bystander recovery for family of mental patient against mental hospital after patient shot and killed stranger); *Covello v. Weis Mkts., Inc.*, 610 A.2d 50, 53 (Pa. Super. Ct. 1992) (denying recovery for witnessing stranger's death); *Standard Fruit and Vegetable Co., Inc. v. Johnson*, 985 S.W.2d 62, 63-64 (Tex. 1998) (denying recovery for witnessing stranger's death); *Prendergast v. Am. Family Mut. Ins. Co.*, No. 94-0471, 1995 Wisc. App. LEXIS 892, at *3 (Wis. Ct. App. July 20, 1995) (denying recovery for would-be rescuer of unacquainted accident decedent).

²¹⁰ *See infra* note 264 and accompanying text.

²¹¹ *See, e.g., Lee v. State Farm Mut. Auto. Ins. Co.*, 533 S.E.2d 82, 85-86 n.7 (Ga. 2000) ("[T]he *Dillon* experience confirms . . . that foreseeability proves too much. Although it may set tolerable limits for most types of physical harm, it proves virtually no limit on liability for nonphysical harm.") (quoting *Thing v. La Chusa*, 771 P.2d 814, 826 (Cal 1989)); *Hansen v. Sea Ray Boats*, 830 P.2d 236, 242 (Utah 1992). The court in *Hansen* noted:

[W]e believe that the framework of *Dillon* is artificial and unworkable. Recovery under *Dillon* is not based on the duty of a defendant or on the foreseeability of the harm caused to a plaintiff, but on the fortuitous circumstances present at the time of the incident. A defendant has no way of knowing the number and proximity of bystanders to any given accident caused by his or her negligence [R]ecover is too attenuated from the principle of duty to allow for reasonable limitations on recovery by a plaintiff

Id.; *see also Williams v. Baker*, 572 A.2d 1062, 1072 (D.C. 1990); *Schmeck v. Shawnee*, 647 P.2d 1263, 1267 (Kan. 1982); *Trombetta v. Conkling*, 626 N.E.2d 653, 655 (N.Y. 1993); *Whetham v. Bismarck Hosp.*, 197 N.W.2d 678, 680 (N.D. 1972); *Hislop v. Salt River Project Agric. Improvement & Power Dist.*, 5 P.3d 267, 270-72 (Ariz. Ct. App. 2000); *Calhoun v. Jumer*, 686 N.E.2d 406, 408 (Ill. Ct. App. 1997). *But see Sinn v. Burd*, 404 A.2d 672, 680 (Pa. 1979) ("The fear of a flood of similar litigation is an insufficient reason to deny bystander recovery.").

measure a pragmatic judgment rather than a systematic application of a general principle.”²¹²

But this observation should unsettle us; it is reminiscent of the judicial confusion we saw in the zone of danger cases. When faced with claims governed by that rule, courts anticipate a worrisome “flood” of litigation, but cannot say *why* that flood might occur. We have seen the zone of danger test instead creates standards *unrelated* to risk and risk communication. These scientifically baseless standards have predictably led to the current chaos for zone of danger cases. For similar reasons, bystander liability under *Dillon* is even more ill-conceived. Let us see why.

One problem is that *Dillon* links emotional harms to *certain* physical harm, not risk. Current bystander law is like the *original physical impact rule*: someone must die or suffer physical injury—and serious or life-threatening at that²¹³—for bystanders to recover emotional damages.²¹⁴ Only Ohio permits bystanders to recover for emotional harms arising from an *unrealized risk* of physical injury or death.²¹⁵ Remember, courts adopted the zone of danger test because they

²¹² Barnes v. Geiger, 446 N.E.2d 78, 81 (Mass. Ct. App. 1983).

²¹³ Kuehn v. Childrens Hosp., 119 F.3d 1296, 1299 (7th Cir. 1998) (applying Wisconsin law) (rejecting bystander NIED claim because bone marrow procedure “victim” underwent “is unpleasant and leaves the patient in some pain, but is not (so far as appears) dangerous, and certainly not crippling. [The “victim”] recovered into the state in which he had been before the procedure within a week and a half of undergoing it.”).

²¹⁴ Robinson v. United States, 175 F. Supp. 2d 1215, 1225 (E.D. Cal. 2001) (rejecting bystander claim because “no Plaintiffs witnessed anyone suffer physical injury as a result of the fire because no one was physically injured as a result of the fire. Even assuming that Plaintiffs were fearful fellow family members might suffer physical injury from the fire, this *generalized* fear is not compensable.”); Fanelle v. LoJack Corp., 79 F. Supp. 2d 558, 565 (E.D. Pa. 2000) (rejecting bystander claim where plaintiff had failed to show “a claimant contemporaneously observes physical injuries being inflicted on a close family member” since no one was injured); Portee v. Jaffee, 417 A.2d 521, 528 (N.J. 1980) (requiring actual death or serious injury for bystander recovery and opining that “[s]ince the sense of loss attendant to death or serious injury is typically not present following lesser accidental harm, perception of less serious harm would not ordinarily result in severe emotional distress. Thus, the risk of an extraordinary reaction to less serious injury is not sufficient to result in liability.”); Dawson v. Wilheit, 737 P.2d 93, 95 (N.M. Ct. App. 1987) (noting for bystander claims to succeed, “[t]he accident must result in physical injury or death to the victim”) (quoting Ramirez v. Armstrong, 673 P.2d 822, 826 (N.M. 1983)); Trisuzzi v. Tabatchnik, 666 A.2d 543, 548 (N.J. Super. 1995) (denying wife’s bystander claim because dog attack victim’s “most serious claimed injury . . . did not manifest itself until well after his encounter with the dog”).

²¹⁵ Paugh v. Hanks, 451 N.E.2d 759, 767 (Ohio 1983) (“[A] cause of action for the negligent infliction of serious emotional distress may be stated where the plaintiff-bystander reasonably appreciated the peril which took place, whether or not the victim suffered actual physical harm, and, that as a result of this cognizance or fear of peril, the plaintiff suffered [genuine] emotional distress.”). Similarly, under the extremely narrow “direct victim” cause of

recognized that *risk*, not *certitude*, of physical harm is a contributor to fear. For the same reasons that the original physical impact rule failed,²¹⁶ we predict that this aspect of *Dillon* will eventually change.

Although *Dillon*'s certain harm requirement is a poor reflection of how bystander emotional harms are caused and *underinclusive* of fear/emotional distress claims,²¹⁷ it *reduces* the risk of uncontrolled liability by artificially limiting the number of meritorious claims. It therefore cannot explain why courts are worried about unchecked bystander liability.

But *Dillon*'s temporal and spatial proximity requirements can. Does a bystander's closer proximity to a physical injury—temporally or spatially—really suggest that emotional harm is more likely to result? This proposition reflects a quaint notion that “closer is scarier,” but that is certainly untrue. A sleeping passenger killed by his drunken driver could not possibly be “closer” in time or space to the harm he suffers. Yet the sleeping passenger has no pre-impact fear or emotional distress. Conversely, modern media formats, replete with video and audio, have so drastically monopolized citizens' lives that in the rare circumstance someone fortuitously becomes a “live” bystander to a graphic harm, it is inconsequential in the great ocean of daily risk perception and fear.²¹⁸

action that California has permitted in recent years, a defendant who by law or by voluntary assumption has a “special duty” to the plaintiff is liable for emotional harms if there is an unrealized risk of physical harm that was “likely” to result in physical injury. *Cf.* *Robinson v. United States*, 175 F. Supp. 2d 1215, 1229 (E.D. Cal. 2001). The court in *Robinson* found that for a ‘direct victim’ claim that

[i]t is true that the Lowden Ranch fire escaped and did, ultimately, come onto Plaintiffs' property and destroyed Plaintiffs' home and possessions. No one would argue that seeing one's home and earthly possessions go up in flames is a shattering experience. However, the ten-minute warning allowed Plaintiffs adequate time to escape the specific threat of physical injury which would have provided the reasonable basis to believe that physical injury would likely result.

Id.

²¹⁶ See *supra* Part III.A.

²¹⁷ Scientific understanding of fear's causes certainly provides no basis to assert that bystanders' fears are generated differently than those who are directly in danger. See *generally supra* Part II.D.

²¹⁸ *Cf.* *Lawson v. Mgmt. Activities, Inc.*, 81 Cal. Rptr. 2d 745, 751 n.11 (Cal. Ct. App. 1999). The court in *Lawson* stated that

[t]he law can hardly permit a major tort suit for unpredictable emotional distress damages for every near-miss and otherwise uneventful unsafe lane change. . . . Breathes there a soul who has not witnessed an accident or two over the past few years? Or at least had a driver come speeding up from behind and momentarily worried that a crash was imminent?

Id. See *generally supra* Part II.D.

Remote viewers can be *more* significantly traumatized by a reproduction of an accident than live witnesses are.²¹⁹

Dillon's prohibitions against temporal or spatial "remoteness," while perhaps *effective* limitations, are arbitrary—"arbitrary" in the sense that the restrictions poorly mirror the factors that actually create fear and emotional distress. Spatial and temporal immediacy are artifices designed only to prevent unbearable bystander liability. In 1989, the California Supreme Court acknowledged its own factors' futility:

[O]nce it is admitted that temporal and spatial limitations bear no rational relationship to the likelihood of psychic injury, it becomes impossible to define . . . any "sensible or just stopping point." By what humane and principled standard might a court decide, as a matter of law, that witnessing the bloody and chaotic aftermath of an accident involving a loved one is compensable if viewed within 1 minute of impact but noncompensable after 15? or 30? Is the shock of standing by while others undertake frantic efforts to save the life of one's child any less real or foreseeable when it occurs in an ambulance or emergency room rather than at the "scene"? . . . [Dissenting *Dillon*] Justice Burke was right when he observed of the *Dillon* guidelines, "Upon analysis, their seeming certainty evaporates into arbitrariness, and inexplicable distinctions appear."²²⁰

²¹⁹ See *supra* note 127 and accompanying text; *James v. Lieb*, 375 N.W.2d 109, 116 (Neb. 1985) (opining that "if a sufficiently close relationship exists, the psychological reaction of the plaintiff in many cases could be the same or perhaps worse on *hearing* of [an injury]" than actually witnessing scene); cf. *Gates v. Richardson*, 719 P.2d 193, 199 (Wyo. 1986). The court in *Gates* believed that

[t]he essence of the [bystander NIED] tort is the shock caused by the perception of an especially horrendous event. It is more than the shock one suffers when he learns of the death or injury of a child, sibling or parent over the phone, from a witness, or at the hospital. It is more than bad news. The kind of shock the tort requires is the result of the immediate aftermath of an accident. It may be the crushed body, the bleeding, the cries of pain, and, in some cases, the dying words which are really a continuation of the event.

Id.; *Flurer v. Pocono Med. Ctr.*, 15 Pa. D. & C.4th 645, 655–56 (1992) ("Receipt of the news of [a] tragedy from others is thought to serve as a buffer against the full impact of viewing the scene, even when the plaintiff does in fact observe the scene after the event in question.") (citing *Mazzagatti v. Everingham*, 516 A.2d 672, 679 (Pa. 1986)).

²²⁰ *Thing v. La Chusa*, 771 P.2d 814, 834–35 (Cal. 1989) (internal citations omitted); see also *Migliori v. Airborne Freight Corp.*, 690 N.E.2d 413, 415–16 (Mass. 1998) (quoting *Ferriter v. Daniel O'Connell's Sons*, 413 N.E.2d 690, 697 (Mass. 1980)). The court in *Migliori* found that

[t]he requirements of spatial and temporal proximity are . . . grounded in practical need to draw a determinate line against excessive liability . . . "[A] plaintiff who rushes onto the

If the spatial and temporal immediacy prongs of *Dillon* are poorly designed, how about its third factor—limiting bystanders' emotional harms to close family members? California still maintains a "close family" bystander requirement, even though it has modified all other *Dillon* factors (as we shall soon see). It observes that "limiting recovery to persons closely related by blood or marriage [is justified] since, in common experience, it is more likely that they will suffer a greater degree of emotional distress than a disinterested witness to negligently caused pain and suffering or death."²²¹ California has nonetheless conceded the "close family" limitation is "indisputably arbitrary since it is foreseeable that in some cases unrelated persons have a relationship to the victim or are so affected by the traumatic event that they suffer equivalent emotional distress."²²²

This "arbitrariness" the California court finds in the "close family" restriction is supposedly different than the "arbitrariness" it saw in *Dillon*'s spatial or temporal immediacy requirements. *Those* limitations now seem "arbitrary" to California because close proximity to a graphic accident does not increase the risk of emotional harm that would result from witnessing the same accident remotely—such as by video or audio feed or recording.²²³ In contrast, courts still contend there is a higher risk of emotional harm for close relatives than for disinterested witnesses (e.g., strangers), even if they say the close relative restriction is "arbitrary." But are the risks of emotional harm *really* higher for closer family members?

A husband's death in a car accident is more likely, all else being equal, to create severe sadness in a loving wife than in a perfect stranger, even if both

accident scene and finds a loved one injured has no greater entitlement to compensation for that shock than a plaintiff who rushes instead to the hospital." In general, we must acknowledge that these requirements of proximity are based more on the pragmatic need to limit the scope of potential liability, than on grounds of fairness or other imperatives of corrective justice.

Id.; see also *Gain v. Carroll Mill Co.*, 787 P.2d 553, 560 (Wash. 1990) (Brachtenbach, J., dissenting). Judge Brachtenbach stated:

What does the [*Dillon* requirement] mean by 'physically present at the scene'? . . . Will th[is] rule require visual observation of the event or mere physical presence? The issue is real . . . Is the emotional injury any less for the mother who learns by telephone within 5 minutes that her child has been killed than for the mother who by pure happenstance comes upon the scene within the same 5 minutes.

Id. (internal citations omitted).

²²¹ *Thing*, 771 P.2d at 828.

²²² *Id.*

²²³ The California Supreme Court *has* permitted bystanders who gained risk awareness *only* via televised media reports to recover for their ensuing emotional harms. See *supra* note 201 and accompanying text.

witnessed the man's death the same way.²²⁴ But fear or shock is not the emotional harm the wife suffers. Rather, she is *bereaved*. Bereavement probably is more likely to arise in close relatives who witness a family member's death or injury than in strangers. Use of *Dillon's* "close family" requirement in *bereavement*-related emotional harms is therefore sensible, even if "arbitrary" in the sense that some who are bereaved cannot recover and some who are not may fraudulently prevail.

Fears, shock, and other forms of emotional distress, on the other hand, are equally likely to arise in strangers and close relatives—fear and shock turn predominantly on risk perception, not the closeness of relationships.²²⁵ Strangers witnessing a traumatic injury are no less likely to become fearful or shocked than close relatives (or even the physically harmed victim himself). Thus, although nearly all courts still invoke "close family" restrictions, this practice makes no scientific sense for emotional distress or fear claims apart from bereavement.²²⁶

A final problem with *Dillon* is that its "foreseeability" test works best for immediate emotional harms (i.e., fright or sudden shock) resulting when a bystander has witnessed a "sudden and violent" injury or death resulting from a

²²⁴ We cannot locate studies that have explicitly compared relative bereavement impacts on close family and strangers of witnessing death or serious injury, probably because the results would be quite predictable. It is well documented, however, that bereavement resulting from the loss of a close loved one has profound health consequences. See K. Goodkin et al., *Bereavement Is Associated with Time-dependent Decrements in Cellular Immune Function in Asymptomatic HIV Type 1-seropositive Homosexual Men*, 3 CLIN. AND DIAGNOSTIC LAB. IMMUNOLOGY 109, 109 (1996); Margaret E. Kemeny et al., *Immune System Changes After the Death of a Partner in HIV-positive Gay Men*, 57 PSYCHOSOMATIC MED. 547, 547 (1995) (finding that HIV-positive individuals who are grieving for a loved one show a marked, relative decrease in immune function, even after controlling for the severity and progress of their illness prior to the loss). Somewhat related, a ten-year prospective study of the parents of Israeli soldiers killed in the Lebanese war found that loss of a son did not affect the general mortality rate of afflicted parents, but those parents who were already divorced or widowed had significantly higher mortality likelihood. Itzhak Levav et al., *An Epidemiological Study of Mortality Among Bereaved Parents*, 319 NEW ENG. J. MED. 457, 457 (1988). This study suggests that loss of a loved one alone might not be enough to trigger harmful bereavement, but that the absence of a support network or the cumulative effect of multiple stressors can overwhelm a person. Cf. S. Cohen et al., *Chronic Social Stress, Affiliation, and Cellular Immune Response in Nonhuman Primates*, 3 PSYCH. SCIENCE 301, 301 (1992) (finding social support boosts primate immune capacity); M. Laudenslager et al., *Possible Effects of Early Separation Experiences on Subsequent Immune Function in Adult Macaque Monkeys*, 142 AM. J. PSYCHIATRY 862, 862 (1985) (finding social isolation decreases primate immune capacity).

²²⁵ See *supra* note 184 and *supra* Part II.D.

²²⁶ Courts must also take care not simply to conclude from an established emotional harm, such as depression, that the disease resulted from shock or fear or, alternatively, retrospective bereavement. Indeed, *both* classes of emotional harms can lead to derivative mental illnesses like depression or PTSD.

“discrete and identifiable traumatic event.”²²⁷ There is no scientific basis for preferring immediate emotional upset.²²⁸ Emotional harms can result from observing a victim who sustains injuries over time and in multiple locations. For example, witnessing a progressive adverse reaction to a misprescribed drug,²²⁹ the gradual death or worsening of injury of a loved one from a misdiagnosed injury or infectious disease,²³⁰ the developing illness of a relative who has been

²²⁷ *Amader v. Johns-Manville Corp.*, 514 F. Supp. 1031, 1032 (E.D. Pa. 1981) (rejecting bystander’s NIED claim because “[i]n the case at bar . . . no ‘sudden and violent accident’ inflicted the emotional damage upon plaintiffs. Clearly, the Supreme Court of Pennsylvania contemplated a discrete and identifiable traumatic event to trigger recovery.”) (quoting *Sinn v. Burd*, 404 A.2d 672 (Pa. 1979)).

²²⁸ See *supra* Part III.B.

²²⁹ *Klauder v. Shop Rite Supermarkets, Inc.*, No. 96-6468, 1997 WL 220289 (E.D. Pa. Apr. 29, 1997) (applying Pennsylvania law) (dismissing drug poisoning claim because Pennsylvania requires physical manifestation of emotional injury, but suggesting if plaintiff had met this condition, he could have recovered); *Crippens v. Sav On Drug Stores*, 961 P.2d 761, 763 (Nev. 1998). The court in *Crippens* permitting a bystander suit to continue where

a daughter purchased prescription medication for her mother. The daughter then initiated and continued administration until her mother was rendered comatose. In effect, because of the pharmacist’s negligence, the daughter poisoned her mother. Under these facts, it was entirely foreseeable that the drug would significantly harm the actual patient and that a close relative would continue administration until the ultimate catastrophic effect was realized.

Id. But see *Huggins v. Longs Drug Stores Cal., Inc.*, 862 P.2d 148, 150–51 (Cal. 1993) (rejecting bystander claim because delayed drug reaction does not fit *Dillon*’s requirement of “contemporaneous sensory observation”); *Fernandez v. Walgreen Hastings Co.*, 968 P.2d 774, 779 (N.M. 1998) (same).

²³⁰ *Ochoa v. Superior Court*, 703 P.2d 1, 14 (Cal. 1985) (granting NIED recovery to parents who witnessed agonizing death of son from pneumonia in juvenile detention center because doctors left him unattended). In *Thing v. La Chusa*, 771 P.2d 814, 824–25 (Cal. 1989), however, the California Supreme Court decided that gradual bystander emotional harms would not be cognizable. As a result, later California Supreme Court decisions have tried to minimize *Ochoa*, either by confusedly stating that the case did not meet *Dillon*’s second prong, yet was correct in its outcome, *id.* (stating that “[d]efendants’ negligence in failing to give proper medical treatment . . . was not a sudden accidental occurrence and thus the second *Dillon* factor was not met,” but later inexplicably concluding “*Ochoa* held only that recovery would be permitted if the plaintiff observes both the defendant’s conduct and the resultant injury, and is aware at that time that the conduct is causing the injury”), or by “explaining” that *Ochoa* was correct because a doctor’s negligent *failure* to act is somehow more obvious to a lay person at the time of that omission than “a misdiagnosis [or] unsuccessful treatment.” *Bird v. Saenz*, 51 P.3d 324, 330 (Cal. 2002); see also *Tackett v. Encke*, 509 A.2d 1310, 1312 (Pa. Super. 1986) (denying mother’s alleged distress from observing son’s admittance to acute care ward during hospitalized convalescence as a result of physician negligence, because plaintiff did not allege that she witnessed a “discrete and identifiable traumatic event”).

exposed to toxic chemicals,²³¹ or being forced to raise a mentally handicapped child as a result of negligently misperformed vasectomies or abortions²³² have all been found to cause fear or emotional distress. Still, most states refuse to budge from *Dillon*'s "immediacy" template.²³³ But the Nevada Supreme Court has found the *Dillon* factors to be an unsatisfactory model for multiple exposure/impact cases. For such gradually sustained (and witnessed) injuries or deaths, the court instead stated it would examine the "overall circumstances" of a bystander's alleged emotional harm.²³⁴

In 1989, the California Supreme Court, troubled by its own inconsistency in applying *Dillon*, modified its bystander liability test in *Thing v. LaChusa*.²³⁵

[A] plaintiff may recover damages for emotional distress caused by observing the negligently inflicted injury of a third person if, but only if, said plaintiff: (1) is

²³¹ Cf. *Amader v. Johns-Manville Corp.*, 514 F. Supp. 1031, 1032 (E.D. Pa. 1981) (applying Pennsylvania law) (rejecting wife's bystander claim because husband's occupational asbestos-related disease was not "sudden" or "violent"); *Vosburg v. Cenex-Land O'Lakes Agronomy Co.*, 513 N.W.2d 870 873-74 (Neb. 1994) (rejecting bystander claim prompted by warehouse worker's severe organo-phosphate poisoning, which had resulted in diarrhea, irregular menstrual periods with heavy bleeding, vomiting, painful dermatitis covering large portions of her body, abdominal cramping, numbness in her extremities, loss of hair, blurred vision, bladder spasms, insomnia, and kidney dysfunction, because the injury was gradual and therefore did not meet the *Dillon* test); *Cathcart v. Keene Industrial Insulation*, 471 A.2d 493, 507 (Pa. Super. 1984) (finding wives could not recover for emotional distress at seeing husbands with asbestosis because "[bystander] recovery [cannot] be had for emotional distress resulting from the development of an occupational disease") (citing *Amader*, 514 F. Supp. at 1032)).

²³² *Speck v. Finegold*, 439 A.2d 110, 113-15 (Pa. 1981) (recognizing parent's mental distress resulting from birth of deformed child where parent was not present at the birth, but ascribing this recovery to the special "duty" that the negligent physicians assumed to the parents).

²³³ This reluctance is not without cause—courts are worried about placing infinite liability on the physical injurer. *Accord Kuehn v. Childrens Hosp.*, 119 F.3d 1296, 1299-1300 (7th Cir. 1998) (applying Wisconsin law). In *Kuehn* it was noted that

if one locates the source of the emotional distress to the parents not in the [bone marrow transplant] procedure but in the entire 'surround,' which includes the parents' horror of the thawing marrow, indignation at the carelessness of Childrens Hospital, and the anguish of witnessing the distress of their small child at the prospect of having to repeat the medical procedure, it becomes entirely credible that the parents' emotional distress was severe. But that is not the test. The test is whether they witnessed 'either an incident causing death or serious injury or the gruesome aftermath of such an event.' They witnessed neither.

Id.

²³⁴ *Crippens v. Sav On Drug Stores*, 961 P.2d 761, 763 (Nev. 1998).

²³⁵ 771 P.2d 814.

closely related to the injury victim; (2) is present at the scene of the injury-producing event at the time it occurs and is then aware that it is causing injury to the victim; and (3) as a result suffers serious emotional distress—a reaction beyond that which would be anticipated in a disinterested witness and which is not an abnormal response to the circumstances.²³⁶

Finally California had acknowledged *Dillon* as a judicial disappointment. *Thing* ascribed this failure primarily to a mismatch between *Dillon*'s spatial and temporal restrictions and the "likelihood of psychic injury." But *Thing* also conceded something about "foreseeability"—the supposed lynchpin of *any* bystander liability test—that indicates systemic problems beyond what any one *application* of foreseeability, like *Dillon*, could be faulted for:

[I]t is clear that foreseeability of the injury alone is not a useful "guideline" or a meaningful restriction on the scope of the [bystander] NIED action. The *Dillon* experience confirms, as one commentator observed, that "foreseeability proves too much Although it may set tolerable limits for most types of physical harm, it provides virtually no limit on liability for nonphysical harm."²³⁷

Thing indicted more than *Dillon*'s methodology. Perhaps unknowingly, it indicted the very foundations of contemporary tort law, which is predicated on "foreseeability." *Thing* has not fixed *Dillon*'s wrongs. Bystander liability is still predicated everywhere except Ohio on a victim's certain injury or death, not on epistemic risks of physical harm. *Thing* left *Dillon*'s "close family" requirement intact; it should be abolished for any emotional injury, save bereavement. *Thing* has not upped the remarkably low evidentiary standards for the "genuineness" of bystander claims.²³⁸ And all states, save Nevada, still do not recognize gradual bystander emotional harms, even though many clinically serious fears are slow to form.²³⁹

What has *Thing* done, then? Its major contribution is its second prong, which has two elements: (1) a bystander must be present at the scene of the injury-producing event at the time it occurs; (2) the bystander is *then* aware that the event is causing injury to the victim. We will refer to the first element as the "Presence" restriction and the second element as the "Awareness" restriction.

²³⁶ *Id.* at 829–830.

²³⁷ *Id.* at 826 (quoting Robert Rabin, *Tort Recovery for Negligently Inflicted Economic Loss: A Reassessment*, 37 STAN. L. REV. 1513, 1526 (1985)).

²³⁸ See *supra* note 220 and accompanying text.

²³⁹ In fact, *Thing* makes gradual bystander emotional harms even more difficult to recover, because a plaintiff must be present during the *entirety* of an accident to make out a cognizable *Thing* claim.

Consider the “Presence” restriction first: a prevailing bystander must have perceived the entire accident in person. By this restriction, *Thing* is keeping *Dillon’s* spatial and temporal requirements alive! A person who perceives the accident on live television—with advantages over many physically present bystanders such as zoom capability and better (sometimes multiple) vantage points—still cannot recover.²⁴⁰ The ironic hilarity should not be lost on us that *Thing* itself proclaimed: “once it is admitted that temporal and spatial limitations bear no rational relationship to the likelihood of psychic injury, it becomes impossible to define . . . any ‘sensible or just stopping point.’”²⁴¹

But while it preserves *Dillon’s* futile spatial and temporal requirements, the Presence restriction also requires a bystander to witness the *entire* accident. Thus, *Thing* categorically denies bystander recovery if the plaintiff (1) has perceived²⁴²

²⁴⁰ One post-*Thing* California Supreme Court decision *did* allow family members who learned exclusively from a media report about a mortician’s mishandling of *their* specific loved one’s body could recover NIED damages. See *Christensen v. Superior Court*, 54 Cal. 3d 868, 901–02 (1991). The court explained that recovery for witnessing injury to a relative through a media source would only be permitted if there is “a well-founded substantial certainty” of that harm. *Id.* at 902. Whether a familial bystander can recover for fears resulting exclusively from media-derived information has not been tested in subsequent cases. Cf. *Ramsey v. Beavers*, 931 S.W.2d 527, 531 (Tenn. 1996). The court in *Ramsey* stated the following:

The plaintiff’s physical location at the time of the event or accident and awareness of the accident are essential factors. Obviously, it is more foreseeable that one witnessing or having a sensory observation of the event will suffer effects from it. . . . Thus, plaintiff must establish sufficient proximity to the injury-producing event to allow sensory observation by plaintiff.

Id.

²⁴¹ *Thing*, 771 P.2d at 834.

²⁴² By “perception,” courts usually mean awareness of the stimulus in its state *immediately* prior to causing the effect. Accord *Kuehn v. Childrens Hosp.*, 119 F.3d 1296, 1298 (7th Cir. 1998) (applying Wisconsin law). The *Kuehn* court stated that:

We don’t think [*Thing*] means that the plaintiff must have observed the act of negligence that produced the accident, which in a products-liability case might require his presence at the design or manufacture of the product, but rather that he must witness the accident and not merely the injured condition of the accident victim.

Id. Clearly, *Thing’s* requirement depends heavily on a presumption of a stimulus’s *immediate* causal action on the effect; if the causal process extends past mere seconds, it is more difficult to resolve whether a bystander has witnessed the causal event, or is merely inferring the presence of the causal event after the fact. Accord *Chester v. Mustang Mfg. Co.*, 998 F. Supp. 1039, 1050 (N.D. Iowa 1998) (applying Iowa law) (holding that a bystander who was not present at the time husband began to be crushed between skid loader and boom but arrived to find husband unconscious and accident still ongoing can recover for emotional damages); *Stump v. Ashland, Inc.*, 499 S.E.2d 41, 49–50 (W.Va. 1997). In *Stump* the court noted that

the stimulus/stimuli through his own senses,²⁴³ but has not *instantaneously* perceived the effect(s) (i.e., for a cause-and-effect $A \rightarrow B$, he instantly perceives A , but not B —a recognition of *risk*),²⁴⁴ or (2) has by his own senses perceived the

[i]n the case of fire, . . . the injury-producing event is not instantaneous, but takes place over a protracted period of time. We hold, therefore, that in a negligent infliction of emotional distress action involving serious injury or death by fire, . . . the plaintiff's presence during the preceding negligent act that caused the fire is not necessary. It is sufficient that the plaintiff is present at the fire because it is actually the fire that is the injury-producing event.

Id.; *Ortiz v. HPM Corp.*, 285 Cal. Rptr. 728, 731 (Cal. Ct. App. 1991) (granting bystander damages where wife discovered bleeding, discolored, and apparently unconscious husband trapped in molding machine with air cylinder already pressing on his chest, pinning him against the stationary platen of the machine).

²⁴³ Some *Thing* adherents appear cautiously willing to look beyond the usually implied *visual* facet of sensory observation. Such cases fixate on *whether* there was perception of injury rather than on *which* senses mustered that perception. See *Bird v. Saenz*, 51 P.3d 324, 328 (Cal. 2002). The *Bird* court noted that

[our] requirement that the plaintiff be contemporaneously aware of the injury-producing event has not been interpreted as requiring visual perception of an impact on the victim. A plaintiff may recover based on an event perceived by other senses so long as the event is contemporaneously understood as causing injury to a close relative.

Id. (citing *Wilks v. Hom*, 3 Cal. Rptr. 2d 803, 807 (1992)); *Amodio v. Cunningham*, 438 A.2d 6, 10–11 (Conn. 1980) (“[T]he requirement of ‘sensory and contemporaneous observance’ does not require a visual perception of the impact although it does require that the plaintiff bystander otherwise apprehend the event.”) (citing *Krouse v. Graham*, 562 P.2d 1022, 1031 (Cal. 1977)); *Corso v. Merrill*, 406 A.2d 300, 307 (N.H. 1979) (finding auditory perception and observance of immediate aftermath of accident make out bystander cause of action); *Ramsey v. Beavers*, 931 S.W.2d 527, 531 n.2 (Tenn. 1996) (“The term ‘sensory observation’ is used to allow, under circumstances in which all prerequisites are met, recovery by one who either does not or cannot visually observe the event, but observes the event by some other sense, such as audibly.”).

²⁴⁴ *Souza v. City of Antioch*, 62 Cal. Rptr. 2d 909, 925 (Cal. Ct. App. 1997) (unpublished opinion) (Plaintiffs “heard the shots that killed their family members, [but] they did not know who, if anyone, had been injured. At worst, they imagined what anyone in their shoes would imagine: that something terrible had happened to someone they loved.”) (citing *Fife v. Astenius*, 284 Cal. Rptr. 16, 18 (Cal. Ct. App. 1991) (denying bystander recovery for family members who were in house, heard crash, and saw debris fly above a wall which separated their yard from street and rushed out to see daughter/sister injured because “recovery is precluded when a plaintiff perceives an accident but is unaware of injury to a family member until minutes or even seconds later”)); *cf. In re Air Crash Disaster Near Cerritos*, 967 F.2d 1421, 1425 (9th Cir. 1992) (applying California law) (distinguishing *Fife* and recognizing bystander’s NIED claim where she witnessed airplane crash into her house and explode when she “knew” husband and three children were inside home); *Wilks v. Hom*, 3 Cal. Rptr. 2d 803, 805 (Cal. Ct. App. 1992) (relaxing slightly *Thing*’s rigid second prong to allow bystander recovery where plaintiff was in living room, speaking to children in bedroom and saw, heard, and felt bedroom explode from gas leak, but did not simultaneously witness childrens’ injuries).

effect(s), but not the stimulus/stimuli (i.e., he instantly perceives *B*, but not *A*—*pathognomonic* recognition)²⁴⁵ or (3) has perceived neither stimulus nor effect

²⁴⁵ *Nanut v. Kimberly-Clark Corp.*, No. 94-16948, 1996 U.S. App. LEXIS 15342, at *7 (9th Cir. 1996) (“Recognition of the consequences of an injury causing event is distinct in California law from perception of the event itself.”) (citing *Martin v. United States*, 984 F.2d 1033, 1038 (9th Cir. 1993) (holding that plaintiff’s awareness that young sister had been separated from day care group and sense that something was wrong did not amount to awareness of sister’s abduction and rape)); *Moore v. Kroger Co.*, 800 F. Supp. 429, 434 (N.D.Miss. 1992) (“[T]he range of foreseeable plaintiffs does not include after-the-fact witnesses of the results of an accident as opposed to witnesses of the accident itself.”); *Rollins v. Peterson Builders, Inc.*, 761 F. Supp. 918, 928 (D.R.I. 1990) (applying Rhode Island law). The court in *Rollins* found that a mother suing for daughter’s electrocution

cannot . . . recover [emotional] damages . . . caused by witnessing the aftermath of her daughter’s electrocution. She did not see the accident. When it occurred in the muffler room of the ‘Endeavor’, she was still . . . waiting to board the ship. The crew did not discover [the victim’s body] until an hour after her accident; it was several minutes later that [the mother] arrived on the scene.

Id.; *Bird v. Saenz*, 51 P.3d 324, 330 (Cal. 2002) (rejecting daughter’s bystander claim who heard emergency doctors paged over P.A. system and later saw blue-faced mother being rushed into surgery, but had not witnessed transection of mother’s artery); *Justus v. Atchison*, 565 P.2d 122, 135 (Cal. 1977) (finding against father who did not witness death of birthing fetus but heard physician pronounce death, stating, “although each plaintiff was in attendance at the death of the fetus, that event was by its very nature hidden from his contemporaneous perception To put it another way, he had been admitted to the theater but the drama was being played on a different stage.”); *Fineran v. Pickett*, 465 N.W.2d 662, 664 (Iowa 1991) (granting no recovery for arrival at scene of accident two minutes after collision and observation of resulting injuries); *Ess v. Eskaton Properties, Inc.*, 118 Cal. Rptr. 2d 240, 245 (Cal. Ct. App. 2002) (rejecting caregiver’s bystander claim against nursing home because caregiver was not present during sister’s rape); *Campanano v. California Medical Center*, 45 Cal. Rptr. 2d 606, 610 (Cal. Ct. App. 1995) (“[A]mputation of [victim’s] arm cannot independently support a cause of action for negligent infliction of emotional distress because plaintiffs were not present at the injury-producing event, but only learned of it after the fact.”); *Johnson v. County of Ventura*, 35 Cal. Rptr. 2d 150, 152 (Cal. Ct. App. 1995) (denying recovery against county hospital that allowed mental patient to escape because family of victim did not witness act of stabbing); *Ebarb v. Woodbridge Park Ass’n*, 210 Cal. Rptr. 751, 753 (Cal. Ct. App. 1985) (finding sister who saw man trying to extricate dead brother’s arm from spa drain but who did not witness drowning cannot recover); *Norred v. Radisson Hotel Corp.*, 665 So. 2d 753, 759 (La. Ct. App. 1995) (denying NIED recovery for wife who was contemporaneously unaware of husband’s robbery in hotel).

This second group of cases, where a person identifies an ostensible causal relationship *only* by recognizing the effect, includes “invisible” stimuli like toxic chemical or radiation exposures. Witnesses to the effects of alleged “invisible” stimuli like radiation or toxic chemical exposures are summarily excluded from bystander recovery, just as if they were not present during the event. *Accord* *Golstein v. Superior Court*, 273 Cal. Rptr. 270, 278 (Cal. Ct. App. 1990). In *Goldstein*, the court rejected parents’ bystander claim for death of son as a result of negligent overdose of chemotherapy radiation because

through his own senses, but has only been informed by others about them (i.e., he perceives neither A nor B instantly).²⁴⁶

Thing's "Presence" restriction rejects recovery for any bystander who has perceived—either directly or from communication with others—only *one* element of a causal relation, $A \rightarrow B$. In so doing, it implicitly rejects the way most humans *think*. It is human nature, observing only this stimulus *A*, or rather observing only that effect *B*, to engage in a mental scramble to relate it to its abstractly known complement.²⁴⁷ Fear is just as likely in many instances if one perceives only the effect, or conversely, perceives only the stimulus, as when one

[i]n the case of an event which cannot be perceived, distress recovery is not allowed. Petitioners argue that since radiation is invisible its fatal dosage cannot be seen, and that it is unjust to deny them recovery based on rules having their origins in fact patterns involving visible events such as accidents. Were it not for *Thing*, petitioners would have a compelling case.

Id.

²⁴⁶ See, e.g., *Ochoa v. Superior Court*, 703 P.2d 1 n.6 (Cal. 1985) (finding father who observed neglect of his son's medical needs may recover for the distress he suffered based only on the single occasion he observed the neglect, but not for the distress he suffered as a result of being informed by his wife of further neglect); cf. *Moss v. City of San Jose*, No. 98-16172, 2000 U.S. App. LEXIS 8421, at *3 (9th Cir. 2000) (unpublished opinion) (slightly relaxing *Thing's* rigid second prong to allow bystander recovery where plaintiff was in the same hallway as a shooting when it occurred "and was sensorially aware, in some important way, of the accident and the necessarily inflicted injury," but did not *see* either the gunshot or the injury as they occurred). False imprisonment cases—where the harm is to the "targeted" victim within a "zone of danger"—do not require anything like *Thing's* awareness restrictions. A plaintiff may recover for emotional harms, where *neither* the physical harms of confinement *nor* the fact that the confinement was occurring were immediately recognized. See, e.g., *Scofield v. Critical Air Medical*, 52 Cal. Rptr. 2d 915, 923 (Cal. Ct. App. 1996). The court in *Scofield* noted:

Contemporaneous awareness of false imprisonment is not an essential element because harm may result even if the victim does not learn until afterward of the confinement or its wrongfulness. A victim can sustain substantial harm as a consequence of a false imprisonment, even if not immediately cognizant of being wrongfully detained.

Id.

²⁴⁷ This is done by comparing an *observed* relation to *known* epistemic risks (i.e., upon perceiving a stimulus *A*, an already known "risk" indicates based on EBL, that *A* both possibly and probably causes effect *B*) or to *known* epistemic pathognomons (i.e., upon observing an effect *B*, an already known "pathognomon" indicates based on EBL that *B* both possibly and probably is caused by stimulus *A*). See *supra* Part II.B; accord Konrad P. Körding & Daniel M. Wolpert, *Bayesian Integration in Sensorimotor Learning*, 427 NATURE 244, 244 (2004) (finding that the human brain employs probabilistic models during motor skill learning to improve performance under conditions of uncertainty).

perceives both.²⁴⁸ *Thing*'s "presence" restriction thus is as scientifically baseless as *Dillon*'s spatial and temporal proximity requirements and will not successfully limit liability.

We turn to the second element in *Thing*'s second prong: the "Awareness" restriction. It requires that a bystander *already* be familiar with the *abstract* causal pairing, $A \rightarrow B$, that represents the general form of the specific accident he is perceiving.²⁴⁹

But courts fail to indicate whether the bystander's abstract conception of $A \rightarrow B$ needs to be *objectively* or merely *subjectively* "known" under this restriction. If subjective beliefs about causality are all that is required, a bystander witnessing the events of *Dempsey v. Hartley*,²⁵⁰ where a wrecked driver suffered violent physical impact to her breasts, could have recovered for emotional damages if he, like that driver, had believed physical impacts cause breast cancer.²⁵¹ Accordingly, a bystander's belief at the time of an injury about its

²⁴⁸ Indeed, this very observation is what permits some courts to allow recovery for zone of danger victims, who, for example, have no better immediate perception of "invisible" stimuli like toxic chemicals or radiation than do bystanders. Compare *Norfolk Railroad v. Ayers*, 538 U.S. 135, 141 (2003) (granting NIED recovery to asbestos-exposed plaintiffs), with *Golstein*, 273 Cal. Rptr. 270, 278 (Cal. Ct. App. 1990) (rejecting parents' bystander NIED claim for death of son as a result of radiation overdose).

²⁴⁹ An analogy to Plato may be helpful here to make this concept tangible: Plato believed that all causes in nature have an "ideal" form. See ARISTOTLE, *METAPHYSICS*, book I, chap. iii, 983 a, b ("There are four recognized kinds of causes. Of these we hold that one is the essence or essential nature of the thing (since the 'reason why' of a thing is ultimately reducible to its formula, and the ultimate 'reason why' is a cause and principle) . . ."). What *Thing* requires is that a person know about the "ideal" Platonic form of finite causality *before* he encounters its "real world" manifestation.

²⁵⁰ See *supra* Part I.

²⁵¹ Products liability tort supports the proposition that a bystander's belief must be assessed objectively. For instance, even California recognizes that the test of whether a product's defective design fails to meet consumers' risk expectations is an exclusively *objective* inquiry. See *Nanut v. Kimberly-Clark Corp.*, No. 94-16948, 1996 U.S. App. LEXIS 15342, at *5-6 (9th Cir. 1996). In *Nanut* the court held that a woman suing for contraction of Toxic Stress Syndrome after tampon use that for recovery as a result of product's alleged design defect, plaintiff failed to demonstrate defect because

[t]he declaration set forth [the plaintiff's] *subjective* beliefs of the risk of harm associated with the use of tampons. Under the consumer expectations test, the court need consider only the expectations of the 'ordinary' consumer. This test is a purely objective standard. 'In determining whether a product's safety satisfies [consumer expectations], the jury considers the expectations of a hypothetical, reasonable consumer, rather than those of the particular plaintiff in the case.

Id. (quoting *Campbell v. General Motors Corporation*, 649 P.2d 224, 233 n.6 (Cal. 1982), and citing *Barker v. Lull Engineering Co., Inc.*, 573 P.2d 443, 451 (Cal. 1978)).

cause must be *objectively* valid.²⁵² Evidence-Based Logic (EBL) provides the rigorous standard required for this objective assessment of risk.²⁵³

Even assuming bystanders' beliefs are objectively judged, there are other reasons to be troubled by *Thing's* Awareness restriction. Johannes von Kries (the same man who pioneered the concept of epistemic probabilities) concluded that even if an abstract causal path $A \rightarrow B$ were objectively established, a defendant should be liable for his acts only if he also *personally* grasped the abstract relationship $A \rightarrow B$ at the time he acted.²⁵⁴ Von Kries termed his limitation the "*subjective prognosis*" ("subjektive Prognose"). This view leads to some potentially questionable results: if a person genuinely does not know that dynamite can cause an explosion, but he throws a stick of it into a crowded bus, killing a score, he is not liable by von Kries's rationale.

In the same way this questionable subjective prognosis limits a *defendant's* liability or guilt, *Thing's* "Awareness" restriction constrains a *plaintiff's* recovery. For instance, the California Supreme Court demonstrated that the Awareness restriction can preclude emotional damage recovery in medical malpractice cases, where expertise is usually needed to assess wrongdoing.²⁵⁵

In other NIED cases decided after *Thing*, . . . courts have not found a layperson's observation of medical procedures to satisfy the requirement of

²⁵² Cf. *Simmons v. Hartford Ins. Co.*, 786 F. Supp. 574, 579 (E.D. La. 1992) (applying Louisiana law) (granting bystander recovery to father of deceased victim who knew daughter's injuries were serious at accident scene, but believed she would live and only later was corrected by a doctor that she probably would not).

²⁵³ See *supra* Part II.B.

²⁵⁴ "[O]ne . . . should only consider that knowledge of the circumstances a person possesses while committing the deed, or could have had, considering that person's capacity to observe and to assess." HERMAN DOOYEWEERD, 2 ESSAYS IN LEGAL, SOCIAL, AND POLITICAL PHILOSOPHY 42-43 (1996).

²⁵⁵ *Thing's* judicial disciples find bystanders to lack the medical expertise to comprehend the causal chain running from a physician's action to a physical injury. See *Blinzler v. Marriott Int'l., Inc.*, 81 F.3d 1148, 1156 (1st Cir. 1996) (applying New Jersey law) (limiting medical malpractice bystander recovery because in most cases of medical malpractice, the causal nexus between the injurious conduct and the harm caused the primary victim is less apparent to lay bystanders than in other types of bystander claims); *Meighan v. Shore*, 40 Cal. Rptr. 2d 744, 756 (Cal. Ct. App. 1995) (finding nurse who feared husband was having heart attack—which he was—cannot claim bystander NIED where initial test results were negative and doctors misdiagnosed man's condition); *Breazeal v. Henry Mayo Newhall Memorial Hospital*, 286 Cal. Rptr. 207, 216 (Cal. Ct. App. 1991) (finding mother's bystander NIED claim not valid for watching unsuccessful efforts to improve son's breathing with a tracheostomy); *Wright v. City of Los Angeles*, 268 Cal. Rptr. 309, 329 (Cal. Ct. App. 1990) (finding plaintiff cannot sue for NIED after watching a paramedic conduct a short medical exam that failed to detect sickle cell shock).

contemporary awareness of the injury-producing event. This is not to say that a layperson can never perceive medical negligence, or that one who does perceive it cannot assert a valid claim for NIED. To suggest an extreme example, a layperson who watched as a relative's sound limb was amputated by mistake might well have a valid claim for NIED against the surgeon. Such an accident, and its injury-causing effects, would not lie beyond the plaintiff's understanding awareness. But the same cannot be assumed of medical malpractice generally.²⁵⁶

In 1904, German jurist Ludwig Traeger, finding von Kries's subjective prognosis unsatisfactory, proposed an alternative rule for determining a defendant's civil liability or criminal guilt.²⁵⁷ He suggested all the "facts" that would have been accessible to the "most insightful human being" or "most clairvoyant person" ("einsichtigsten Mensch") should be considered.²⁵⁸ Traeger's approach, too ambitious in its time without the instantaneous and near-limitless searchability that computers and the World Wide Web afford, is at bottom nothing other than EBL. Adopting Traeger's rule means only EBL, not a plaintiff's subjective "knowledge," determines liability.²⁵⁹

So is Traeger's "most clairvoyant person" (i.e., EBL) or *Thing's* "Awareness" the better delimiter of fear liability? If risk communication were not generally as likely to confer risk perception as direct experiences are, then *Thing's* Awareness requirement—that a person be personally present and simultaneously perceive an event—would be a scientifically sensible limitation on fear liability. But this supposition about risk communication's inferiority in causing fear is false. Risk communication is not just as good as personal experience in fueling

²⁵⁶ *Bird v. Saenz*, 51 P.3d 324, 329 (Cal. 2002).

²⁵⁷ See generally LUDWIG TRAEGER, DER KAUSALBEGRIFF IM STRAF- UND ZIVILRECHT (1904).

²⁵⁸ Dooyeweerd records that a third scholar, Rümelin, argued that beyond that knowledge relevant to Traeger's "most insightful human being," he would have countenanced any additional causally relevant information "even if [it] . . . may become known after the occurrence of the effect" Rümelin termed his approach the "objective ex post prognosis" ("objective nachträgliche Prognose"). HERMAN DOOYEWEERD, 2 ESSAYS IN LEGAL, SOCIAL, AND POLITICAL PHILOSOPHY 43 (1996). We find Rümelin's approach unsatisfactory; by allowing additional knowledge arising after the injurious effect to affect liability, Rümelin weakens the important concept of epistemic possibility as a product of the available knowledge of its time. See *supra* Part II.B. If objective ex post prognosis governed our fear causality deliberations, plaintiffs without a solid epistemic basis on which to recover against a physical injurer at the time they became fear conditioned could still recover for fear that could not be properly attributed to the actions of the injurer until *after* the fear was already manifest.

²⁵⁹ We emphasize that this does not mean that a plaintiff now faces an easier time in achieving recovery for fear. The fight will simply shift and lie more in scientific causation, less in inane bickering over artificial and scientifically baseless negligence standards. This is a good thing.

fears or emotional distresses—sometimes it is better. Even the California Supreme Court has tacitly admitted as much.²⁶⁰ As a result, EBL alone (an objective form of causality)—and not the defendant's subjective beliefs about a causal relationship—establishes liability.

There is still another objection to the Awareness restriction. We learn to fear stimuli through conditioning—the first encounter “primes” us, and subsequent encounters scare or distress us. Under a Kriesian liability regime, only those defendants who have the bad luck of encountering a plaintiff *already conditioned* pay for fear. A defendant whose act instead *conditions* a plaintiff (that is, the plaintiff was unaware of the abstract causal relation $A \rightarrow B$ until the defendant's negligent acts made him directly aware or someone later told the plaintiff what the defendant had done to him) is not liable. Kriesian liability apportionment could make sense if the *initial* conditioning act contributed less to the plaintiff's ultimate fear than subsequent (and pre-conditioned) encounters. But fear does not work like that.²⁶¹ For this final reason too, the Awareness limitation is

²⁶⁰ See *supra* note 240 and accompanying text.

²⁶¹ In fact, information about a negative stimulus that is communicated *prior to* encountering it may sometimes be a greater contributor to fears than information given *subsequent to* that exposure. Compare Winnie Winters et al., *Media Warnings About Environmental Pollution Facilitate the Acquisition of Symptoms in Response to Chemical Substances*, 65 PSYCHOSOMATIC MED. 332, 335–36 (2003) (finding cohort given information about environmental pollution prior to exposure to noxious smelling substances exhibits greater subjective sensitivity than those who do not receive information), with Stephan Devriese et al., *Perceived Relation Between Odors and a Negative Event Determines Learning of Symptoms in Response to Chemicals*, INT'L ARCHIVES OF OCCUPATIONAL & ENVTL. HEALTH (Feb. 25, 2004) at <http://springerlink.metapress.com> (last visited Oct. 9, 2004) (finding same information as previous study, when given after exposure, does not trigger subjective health symptoms). See also JOSEPH LEDOUX, *THE EMOTIONAL BRAIN: THE MYSTERIOUS UNDERPINNINGS OF EMOTIONAL LIFE* 143–45 (1996) (“Conditioned fear learning occurs quickly. . . . An animal in the wild does not have the opportunity for trial-and-error learning. Evolution has arranged things so that if you survive one encounter with a predator you can use your experience to help you survive in future situations.”). One appeals court considered the reverse proposition—whether a defendant should have to pay for aggravation of atypically strongly conditioned fears. That court awarded full damages to the plaintiff, concluding that “a defendant must take a plaintiff as he finds him and hence may be held liable in damages for aggravation of a preexisting [mental] illness.” *Bartolone v. Jeckovich*, 103 A.D.2d 632, 635 (N.Y. Sup. Ct. 1984) (awarding full damages to body-builder plaintiff suffering schizophrenia, social withdrawal, and neglect of once-prided physique after slight physical injury in car accident for aggravation of pre-existing “quiescent” mental illness, even where there was evidence body-builder had engaged in intense workout lifestyle because of intense fear of physicians and illness following deaths of mother and sister from cancer when plaintiff was young). Accord W.J. Jacobs & L. Nadel, *Stress-Induced Recovery of Fears and Phobias*, 92 PSYCHOL. REV. 512, 525 (1985) (finding that in people with controlled but unextinguished emotional memories, even minor stresses can cause full flare-ups of fear).

scientifically baseless.²⁶² We should very much prefer EBL—which tests the knowledge of the “most clairvoyant person”—as the standard for determining negligence.²⁶³

IV. HOW TO ASSIGN FEAR LIABILITY IN A COMMUNICATIONS-BASED WORLD

We have completed our review of contemporary fear (and related emotional distress) law. It revealed no scientific justification for treating bystanders’ and “physically at-risk” victims’ “emotional distresses” and fears differently. More important, we have doubted the validity of nearly every restriction courts have put on both categories of plaintiffs. Our recurrent claim is that current fear liability does not reflect the causation of fear as scientists explain it—recall the physical impact that “caused” breast cancer in *Dempsey v. Hartley*. Even the reader who agrees with our analysis may worry that by eliminating these restrictions, arbitrary though they may be, there will be no limits to physical injurer liability.

One solution is to not recognize fear claims, or some major subset of them, like bystander claims.²⁶⁴ Courts usually find this solution unsatisfactory. They

²⁶² Further evidence of the wholly ungrounded nature of both *Dillon* and *Thing*’s restrictions is found by looking to *intentional* infliction of emotional distress (IIED) claims, as well as “special duty” claims, where either common law precedent, a contract, or a statute creates a unique and direct relationship between the tortfeasor and the bystander. (California calls special duty bystander NIED claims “direct victim” claims.) Most courts are prepared to ignore nearly all the *Dillon* or *Thing* requirements if the claim falls in either of these categories. See, e.g., *Christensen v. Superior Court*, 54 Cal. 3d 868, 901–02 (1991) (concluding in “direct victim” case that bystanders could recover for emotional harms that arose after learning *exclusively* from media reports that deceased family member’s body had been mishandled). But every so often, a court concludes the opposite: the existence of intent or a special duty simply is not a satisfactory basis for achieving results different from NIED cases. See *Wisniewski v. Johns-Manville Corp.*, 812 F.2d 81, 89 (3d Cir. 1987) (noting that “[t]he critical element for establishing [emotional harm] liability is the contemporaneous observance of the injury to the close relative,” not the physical injurer’s state of mind) (citing *Mazzagatii*, 516 A.2d at 679). We are in agreement with *Wisniewski* that the particular distinction on the basis of intent or contractual relationship versus negligence is not a sensible reflection of fear’s etiology.

²⁶³ We define negligence using EBL *infra* in Part IV.A.

²⁶⁴ The Supreme Court itself, when given an inviting “blank slate” in *Gottshall* in 1994, declined to permit *any* bystander liability under FELA:

Conditioning liability on foreseeability . . . is hardly a condition at all. . . .

. . . .

. . . Because one need not witness an accident to suffer emotional injury therefrom, . . . the potential liability would not necessarily have to end there; any Conrail employees who heard or read about the events surrounding [the victim’s] death could also foreseeably have

believe it is neither just nor economically sensible to permit unrecompensed fear.²⁶⁵ More important, because it is devilishly difficult, time consuming, and costly to extinguish existing fears,²⁶⁶ there is exceptional need to *deter* actors from causing fear.

There is hope. If we were to understand (1) how fear is caused, and more important, *who* is causing it and (2) *then* established some cut-off as to how much

suffered emotional injury as a result. Of course, not all of these workers would have been as traumatized by the tragedy as was [the plaintiff], *but many could have been*. Under [this] standard, Conrail thus could face the potential of unpredictable liability to [others] far removed from the scene of the allegedly negligent conduct that led to [the victim's] death.

Consolidated Rail Corp. v. Gottshall, 512 U.S. 532, 553 (1994) (emphasis added); *see also* Gideon v. Norfolk S. Corp., 633 So. 2d 453, 454 (Ala. 1994) (refusing to recognize any NIED claim, but noting that "[e]ven if we did recognize such a cause of action, we would not extend it to bystanders"); Tobin v. Grossman, 249 N.E.2d 419, 422 (N.Y. 1969) (rejecting any bystander liability because "foreseeability, once recognized, is not so easily limited"), *overruled by* Bovsun v. Sanperi, 461 N.E.2d 843 (N.Y. 1984) (allowing bystander liability only for those within zone of danger); Slaton v. Vansickle, 872 P.2d 929, 931 (Okla. 1994) (rejecting without analysis any form of bystander NIED liability).

²⁶⁵ Cf. Gideon, 633 So. 2d at 454–55 (refusing to recognize NIED cause of action in any form). *But see* AALAR, Ltd. v. Francis, 716 So. 2d 1141, 1144 (Ala. 1997) (reducing broad previous Alabama holdings, such that "negligently causing emotional distress is not an independent tort in Alabama, but, rather, that it is part and parcel of the traditional tort of negligence").

²⁶⁶ *See* JOSEPH LEDOUX, *THE EMOTIONAL BRAIN* 236 (1996) ("[T]elling an acrophobic that no one has ever accidentally fallen off the Empire State Building and that he will be just fine if he goes to the top, or forcing him to go up there to prove the point, does not help, and can even make the fear of heights worse rather than better. Human phobias seem more resistant to extinction, and more irrational, than conditioned fears in animals."); P. Winkielman et al., *Subliminal Affective Priming Resists Attributional Interventions*, 11 COGNITION & EMOTION 433, 448 (1997) (finding that emotional priming to neutral images results in affinity/dislike for images that are not reversed by opposing emotional priming in second round of exposures); A.Y. Shavlev, Y. Rogel-Fuchs & Roger K. Pitman, *Conditioned Fear and Psychological Trauma*, 31 BIOLOGICAL PSYCHIATRY 863, 863–64 (1992) (finding that emotional memories are not extinguished, but only controlled, through corrective therapy); Joseph E. LeDoux et al., *Indelibility of Subcortical Emotional Memories*, 1 J. COGNITIVE NEUROSCIENCE 238, 241 (1989) (same); *see also* Roger E. Kasperson et al., *Stigma and the Social Amplification of Risk: Toward a Framework of Analysis*, in RISK, MEDIA, AND STIGMA: UNDERSTANDING PUBLIC CHALLENGES TO MODERN SCIENCE AND TECHNOLOGY 12 (James Flynn et al. eds., 2001) ("Once perceptions of unfamiliar [risks] are formed, they may become resistant to new or 'corrective' information."); Tsunoda Katsuya, *Public Response to the Tokai Nuclear Accident*, 21 RISK ANALYSIS 1039, 1045 (2001) (finding after nuclear power plant incident in Japan that "neutrals were more likely to become opponents [to nuclear energy] than supporters were likely to become neutrals"); Ali Siddiq Alhakami & Paul Slovic, *A Psychological Study of the Inverse Relationship Between Perceived Risk and Perceived Benefit*, 14 RISK ANALYSIS 1085, 1094–95 (1994).

of that fear to prohibit,²⁶⁷ we would be constructing effective legal deterrence for the actual fear creators. We will address each of these two points in turn.

First: Risk communicators often create excessive fear.²⁶⁸ Accordingly, they too must sometimes bear blame for legally compensable fears, either alone or jointly with the physical injurers who often are already held liable. If instead we continue through cases like *Dempsey* to pin the liability tail on the wrong donkey, tort becomes only a wealth transfer mechanism, not the means of minimizing social risks it is usually understood to be.²⁶⁹

Second: a cut-off to ensure that liability does not become unbearable, as the Supreme Court has suggested in a First Amendment case, can proceed from the premise, the more likely a person's clinically serious fear, the greater should be his priority for recovery in the hierarchy of fearful claimants.²⁷⁰

Admittedly, this rule does not prevent all fears from happening. It instead prioritizes, allowing for judicial resources and time to go towards preventing those fears that are the most likely and the most socially costly, much as risk regulators have urged be done in other contexts.²⁷¹ This Article's remainder shows how to construct liability in accord with these two concepts.

A. Definitions: Proximate Risk, Negligence, Duty

Everyone who endures first-semester torts intones forevermore that duty, negligence, and proximate cause are necessary for liability. Pop quiz: define "duty." There's one condition on this challenge: your definition must permit consistent *prediction* of case outcomes. How about: duty is the "*foreseeability* that harm may result if [the duty] is not exercised"?²⁷² This is not so much a

²⁶⁷ We acknowledge that establishing *any* cut-off as to how much fear we will permit will always seem arbitrary—this is no less true of the current, ineffective limitations on fear. But we would at least know that whatever liability is assigned is proportionate to the defendant's relative fear contribution, and will be an *effective* deterrent.

²⁶⁸ See *supra* Part II.D.

²⁶⁹ Again, by asserting communicators "must" sometimes be liable pursuant to "tort principles," we are *assuming* that we have the power to set their optimal level of speech however we choose in order to deter risks (in this case, the risk of fear). First Amendment and other speech-enhancing privileges certainly may undercut this "optimal" risk management, but we reserve discussion of how they do so for a different article.

²⁷⁰ See *Virginia v. Black*, 538 U.S. 343, 363 (2003) ("[J]ust as a State may regulate only that obscenity which is the most obscene due to its prurient content, so too may a State choose to prohibit only those forms of intimidation that are most likely to inspire fear of bodily harm.").

²⁷¹ See *infra* note 337.

²⁷² *Orlo v. Connecticut Co.*, 21 A.2d 402, 404 (Conn. 1941) ("The ultimate test of the existence of a duty to use care is found in the foreseeability that harm may result if it is not exercised.") (citing *Botticelli v. Winters*, 7 A.2d 443, 445 (Conn. 1939)).

definition as a negation—it is what duty is *not*. Are we speaking about “foreseeability” as it relates to duty, negligence, or proximate cause?²⁷³ And do we not all know that as far back as *Palsgraf*, there has been disagreement about whether foreseeability should matter for liability?²⁷⁴ Perhaps we should just conclude, as *Dillon* stated: “duty is not sacrosanct in itself, but only an expression of the sum total of those considerations of policy which lead the law to say that the particular plaintiff is entitled to protection.”²⁷⁵ But that would not take us far *predicting* duties.²⁷⁶

Define “negligence” instead. Yes, negligence means the “breach of a duty,” or the “breach of a foreseeable obligation,” but these taxonomies are circular. Tell us how to predict negligence.

A final chance before demanding law school tuition back: what is “proximate cause”? No, proximate cause is *not* scientific causality, and although courts often substitute the word “duty” for proximate cause, this too is incorrect. Invoking “duty” when discussing proximate cause is problematic, for proximate cause is ostensibly a jury question, while duty remains a judge question.²⁷⁷ Is proximate

²⁷³ Lawrence M. Solan & John M. Darley, *Causation, Contribution, and Legal Liability: An Empirical Study*, 64 LAW & CONTEMP. PROBS. 265, 274–75 (2001) (noting that “[i]n many cases, foreseeability plays a prominent role. . . . [A]mong those that do, courts are not in accord as to whether the issue to which it relates is duty, proximate causation, or a generalized notion of negligence. Some judges have recognized this disagreement among courts in analyzing this problem.”).

²⁷⁴ In *Palsgraf v. Long Island Railroad*, 162 N.E. 99, 99 (N.Y. 1928) (Cardozo, J.), Cardozo stated that

[i]f no hazard was apparent to the eye of ordinary vigilance, an act innocent and harmless, at least to outward seeming, with reference to her, did not take to itself the quality of a tort because it happened to be a wrong, though apparently not one involving the risk of bodily insecurity, with reference to some one else.

Id. In his dissent Judge Andrews noted that “[e]very one owes to the world at large the duty of refraining from those acts that may unreasonably threaten the safety of others [W]hen injuries do result from our unlawful act we are liable for the consequences. It does not matter that they are unusual, unexpected, unforeseen and unforeseeable.” *Id.* at 103.

²⁷⁵ *Dillon v. Legg*, 441 P.2d 912, 916 (Cal. 1968).

²⁷⁶ See Lee Epstein & Gary King, *The Rules of Inference*, 69 U. CHI. L. REV. 1, 3 (2002) (observing that “a large fraction of legal scholarship makes at least some claims about the world based on observation or experience” rather than on proper scientifically measured bases).

²⁷⁷ Dobbs makes these two points well:

Many writers and some courts favor approaching scope of risk issues involved in proximate cause or legal cause decisions through the language of duty. The great advantage of doing so is that the confusions engendered by use of causal language might be avoided. . . . [F]ew if any judges can specialize in the diverse legal issues that confront them. They cannot all be up-to-date experts in tort theory. Consequently, when judges

cause a limitation on liability only to those events that are “reasonably foreseeable”?²⁷⁸ (Recalling the difficulty we had with “foreseeability” in looking at *Dillon* and *Thing*, remind us what it means?)²⁷⁹ Or is it a confessedly “political” and “arbitrary” restriction?²⁸⁰

Unsettling looseness plagues basic tort definitions.²⁸¹ Liability must be based on *epistemic* risks. Courts do not do this. Why then should we expect liability definitions, which are predicated on risk, to be any better? If we’re hoping to act predictably in assigning liability to physical injurers or risk communicators for fears they cause, we simply must state general liability definitions more rigorously.²⁸² And so we do.

Proximate Cause (“*Proximate risk*”). A proximate risk is an epistemic risk associated with an act that (i) is identified as having been an actual cause of injury, and that should have been mitigated at the time the act occurred because

confront a problem already labeled as a proximate cause problem, the label alone is likely to have at least some subliminal effects that steer analysis in the wrong direction.

But . . . duty issues themselves are slippery chameleons. Moreover, to cast an issue in terms of duty is to provide another subliminal suggestion—namely that the decision is to be made by judges rather than juries.

DOBBS, *supra* note 163, §230, at 584.

²⁷⁸ *Poskus v. Lombardo's of Randolph, Inc.*, 670 N.E.2d 383, 386 (Mass. 1996) (“There must be limits to the scope or definition of reasonable foreseeability based on considerations of policy and pragmatic judgment.”).

²⁷⁹ H.L.A. HART & TONY HONORÉ, *CAUSATION IN THE LAW* 273 (2d ed. 1985) (“Liability in negligence has and must have its limits but it is not clear that foreseeability is an appropriate notion for settling them.”).

²⁸⁰ *Palsgraf*, 162 N.E. at 103 (Andrews, J., dissenting) (“What we do mean by the word ‘proximate’ is, that because of convenience, of public policy, of a rough sense of justice, the law arbitrarily declines to trace a series of events beyond a certain point. This is not logic. It is practical politics.”).

²⁸¹ For instance: do any of these expressions assist us in determining whether several tortfeasors may all be proximate causes in enabling tort of a single harm? Do they justify why one court proclaimed quite emphatically that owners of crashing commercial airplanes have “no duty” to bystanders who suffer emotional harms, then shamefully scribbled in a footnote that this global rule might not hold if the particular bystanders had suffered heart attacks because of their fright? *See Lawson v. Mgmt. Activities, Inc.*, 81 Cal. Rptr. 2d 745, 755 n.16 (Cal. Ct. App. 1999).

²⁸² Because in Part III.D we found it the best estimator of epistemic risk, our definitions are motivated by adaptation of Ludwig Traeger’s “most clairvoyant person” rule. Under our adaptation, liability should attach if the epistemic risk (a) is recognizable under EBL at the time the event occurred (b) taking into account any additional knowledge the alleged tortfeasor has. Condition (b) is not usually applicable in an EBL-based world, but may have relevance for, say, individuals with classified information. *See generally* LUDWIG TRAEGER, *DER KAUSALBEGRIFF IM STRAF- UND ZIVILRECHT* (1904).

(ii) the epistemic risk is “significant” and (iii) the net social cost, if the act had been modified so as to counteract this particular risk, would have been less than the unaltered act’s net social cost.

The definition is a mouthful, but if we break it down into its three enumerated parts, it is sensible.

(i) *Epistemic risk*. Proximate cause is a kind of *epistemic risk*, verified by EBL. Proximate cause is also a form of *negligence* (which, we will see in the next definition below, is a *set* of epistemic risks).²⁸³ Negligence exists even if there is only exactly one epistemic risk that meets its definitional conditions. Not coincidentally, that is also the definition of a proximate cause, which can therefore be thought of as the “weakest” form of negligence.²⁸⁴

Furthermore, beware: proximate cause (or negligence in general) is *not* an *act* (a human-prompted stimulus). It is a *risk* associated with an act.²⁸⁵ Courts and scholars, beginning with then-Judge Cardozo,²⁸⁶ have often made this mistake.²⁸⁷ The distinction may seem semantic, inasmuch as an act must occur for an

²⁸³ See *supra* Part II.B. Also, Dobbs suggests that proximate cause—“a rule limiting liability for risk to the scope of the risk”—is properly viewed “as a corollary to or even a part of the basic rule of negligence.” DOBBS, *supra* note 163, §181, at 446. In fact, our rigorous definition permits us to go one better: proximate cause is *always* a kind of negligence.

²⁸⁴ Notice, however, the implicit prerequisite to proximate cause that is *not* imposed on negligence generally: for proximate cause to exist, not only must it be the case that it is *generally* “possible” for the particular epistemic risk of harm to cause injury, it *must have done so* in the particular instance. That is, the legal issue of “*specific scientific causality*” (“specific cause in fact”) must be resolved *before* proximate cause can be.

²⁸⁵ True, a person cannot have created or perpetuated an epistemic risk *without* committing an act or omission. But this is not the same as saying the act *is* the proximate cause (or negligence). Even if zebras were the only creatures with stripes, this does not mean a zebra is a stripe.

²⁸⁶ See *Palsgraf*, 162 N.E. at 100. The court in *Palsgraf* noted:

[O]ne who drives at reckless speed through a crowded city street is guilty of a negligent act and, therefore, of a wrongful one irrespective of the consequences. Negligent the act is, and wrongful in the sense that it is unsocial If the same act were to be committed on a speedway or a race course, it would lose its wrongful quality. The risk reasonably to be perceived defines the duty to be obeyed, and risk imports relation

Id.

²⁸⁷ *Hernandez v. Trawler Miss Vertie Mae, Inc.*, 187 F.3d 432, 437 (4th Cir. 1999) (“[I]t is well understood that negligence is ‘conduct which falls below the standard established by law for the protection of others against unreasonable risk of harm.’”) (emphasis added) (quoting RESTATEMENT (SECOND) OF TORTS § 282 at 9 (1965)); *Beshada v. Johns-Manville Prods. Corp.*, 447 A.2d 539, 544 (N.J. 1982) (“[n]egligence is conduct-oriented, asking whether defendant’s actions were reasonable . . .”).

epistemic risk to exist. Yet it is necessary because examining the “act” usually regresses to considering only the defendant’s *conduct*. This deprives scrutiny of the *context* in which that act occurred and jeopardizes rigorous assessment of whether the risk associated with the act is both epistemic and “significant.” Although Judge Cardozo made this mistake in *Palsgraf*, he was on the right track when he distinguished speedy drivers on a racetrack from those on a crowded public street.²⁸⁸

(ii & iii) “*Significant*” Risk & Decision Analysis (*Cost-Benefit Analysis*). For an epistemic risk associated with an act to also be a proximate cause, it must be both “significant” and inexcusable by decision analysis. The aim of these requirements, consistent with the principle we set out in the introduction to Part IV, is to prioritize risk deterrence and address the most socially costly, inexcusable risks first. We will discuss these requirements at length in the next section, Part IV.B.

We make two final observations about proximate causes. First, a plaintiff must *identify* the proximate cause. Proximate causes are therefore always *litigated* risks. Second, litigators and judges should use the expression, “proximate risk,” rather than the misnomer “proximate cause,” to avoid continued confusion with scientific causation.²⁸⁹ We will do so ourselves henceforth.

Negligence. “Negligence” is (i) a *subset* of all epistemic risks that are associated with an act. Specifically, it is that subset of epistemic risks that should have been mitigated at the time the act occurred because (ii) the epistemic risk(s) was/were significant and (iii) the net social cost, if the act had been so modified as to counteract any epistemic and significant risk(s), would have been less than the unaltered act’s net social cost.

Negligence is a kind of *set* of epistemic risks (“negligent risks”) associated with an act.²⁹⁰ For negligence to exist, *at least one* epistemic risk must be

²⁸⁸ Judges sometimes create categorical duty “rules,” such that an act is presumptively wrongful, no matter what its context. In the limit, these rules blur negligence with strict liability. For instance, dynamite blasting is categorized as an “ultrahazardous” activity—harms resulting from it are presumptively recoverable. *See* *Garden of The Gods Village, Inc. v. Hellman*, 294 P.2d 597, 600 (Colo. 1956) (“Where damage to property is done by vibration or concussion from blasting operations . . . there is liability irrespective of negligence . . . proof of negligence is unnecessary to establish liability.”); *see also Palsgraf*, 162 N.E. at 100 (Cardozo, J.) (“Some acts, such as shooting, are so imminently dangerous to any one who may come within reach of the missile, however unexpectedly, as to impose a duty of prevision not far from that of an insurer.”). This author has misgivings about the widespread invocation of categorical duty rules, particularly in the context of fear, but that topic is beyond the scope of this article.

²⁸⁹ *See supra* note 277 and accompanying text.

²⁹⁰ Some acts or omissions may have *no* known negligent risks associated with them at a given time. Understand, however, it is never permissible to pronounce such acts as “definitively” non-negligent. Because epistemic risk is a product of time and humanity’s

“significant,” and an *aggregate* decision analysis must show that leaving the act unaltered has a greater total social cost than eliminating or abating some or all “significant” epistemic risks.²⁹¹

The traditional judicial concept of negligence says that an individual is still “negligent,” even if the negligent risks associated with his conduct are *not* the ones being litigated.²⁹² Thus, a defendant could be negligent, but be exonerated from liability because he has not created a proximate risk (which is the *litigated* risk).

Identifying *all* negligent risks associated with a conduct is not necessary in practice. Instead, one should simply ask whether the *litigated* risk is a proximate risk. If the answer is no, there is no need to discuss negligence—the claim can be dismissed for want of proximate risk. If instead proximate risk exists, so too does the minimal form of negligence.²⁹³

Duty. Duty exists for a defendant in a negligence-based cause of action (i) if a reasonable jury could find negligence and proximate risk, (ii) unless there exists an ulterior policy motivation, unrelated to negligence and proximate risk, that compels the conclusion that liability should not attach to a defendant. Duty likewise exists, (iii) even if no reasonable jury could find negligence or proximate risk (iv) if there exists an ulterior policy motivation, unrelated to negligence and proximate risk, that compels the conclusion that liability should attach to a defendant.

collective understanding, risks that are not epistemically possible today may become so tomorrow.

²⁹¹ *Aggregate* decision analysis proceeds much the same as decision analysis would for proximate risk. The only change is that aggregate decision analysis considers whether act modification to avoid *any* set of significant risks (not necessarily the *litigated* risk(s)) would be net socially beneficial. See *infra* Part IV.B.ii.

²⁹² Dobbs gives a fine example of this conception of negligence:

[S]uppose the defendant parks his car on the street, parallel to the curb, in a no-parking zone. This conduct is negligent because it runs the [significant] risk that traffic will be impeded, but leaving a car parked in a no-parking zone does not negligently create a risk of injury to an able bodied pedestrian. Courts are likely to say that the driver is not a proximate cause of the pedestrian’s harm from walking into the car, even though other risks made it negligent to park the car in such a way.

DOBBS, *supra* note 163, § 181, at 446.

²⁹³ This is because a proximate risk is a “significant” risk not exemptable by decision analysis. Such a risk, if it exists, *also* meets negligence conditions (ii) and (iii) stated above, meaning there is a *set* of negligent risks with at least one element. This technique yields only the “weakest” form of negligence: only one negligent risk has been proven to exist. Observe that asking about the *litigated* risk(s) first will also avoid the similarly Sisyphean task of identifying *every* epistemic risk associated with a particular act. One simply asks whether the *litigated* risk is epistemic.

There is a hugely important difference between “duty” and the former two definitions: duty is judge-determined, but “negligence” and “proximate risk” are often jury questions.²⁹⁴ Defining duty rigorously, therefore, is vital for judicial procedure.

Duty in a negligence-based action arises in one of two fashions. Per Part (i) of our definition, to decide whether the issue is suited for a jury (and hence, whether a duty exists), a judge makes his own preliminary conclusion whether a reasonable jury could find proximate risk and negligence.

But as part (ii) of our definition evinces, there is a notable exception to this general rule. Courts are sometimes motivated by policy considerations to say that “no duty exists,” *despite* the fact that a reasonable jury could find negligence and proximate risk.²⁹⁵ What are these considerations? They can be nearly anything courts believe should affect liability that are not part of *typical* liability assessment (i.e., negligence, proximate risk, scientific cause, and injury determination). For

²⁹⁴ DOBBS, *supra* note 163, § 225 at 577 (“The most significant identity of limited or no-duty rules and immunity rules is that they are determined by judges or legislatures, not by juries. That is an enormous contrast with the negligence issue, which is a jury determination whenever reasonable people can differ.”).

²⁹⁵ Courts weighing duty have been remarkably lax in failing to separate negligence and proximate risk considerations—typically reserved for juries—from extra-negligence factors. Rather, many courts heap negligence-related and extra-negligence factors together in a confused mass that makes duty appear increasingly like a jury question, rather than the question of law it is. Dobbs notes that:

[Duty] factors are so numerous and so broadly stated that they can lead to almost any conclusion [H]owever, they are mainly the very same factors that determine the negligence question. Yet when the question is phrased as a question of duty, the judge, not the jury, will be the decision maker, even on such quintessential jury issues as foreseeability.

Id. § 229, at 583. Consider, for example, the factors that are to be weighed under California’s test of duty: (1) the extent to which the transaction was intended to affect the plaintiff, (2) the foreseeability of harm to him, (3) the degree of certainty that the plaintiff suffered injury, (4) the closeness of the connection between the defendant’s conduct and the injury suffered, (5) the moral blame attached to the defendant’s conduct, (6) the policy of preventing future harm, and (7) effective judicial administration, including guarding against limitless liability. *See Amaya v. Home Ice, Fuel & Supply Co.*, 379 P.2d 513 (Cal. 1963), *overruled by Dillon v. Legg*, 441 P.2d 912, 925 (Cal. 1968) (rejecting *Amaya*’s holding, but not its duty factors). Factor one assesses whether the tort case is based in negligence. Factor two is akin to negligence’s foreseeability prong. Factor three touches on actual causality and certainty of injury, two other traditional requirements for recovery. Factor four is a vague description of proximate cause. Factor five is a vague factor that could represent effectively anything, but if reduced to an “economic” set of considerations, represents the cost-benefit prong in the definition of negligence. Factor six is related to the “significance” prong of the negligence definition. Thus, only Factor seven—judicial administrative ease and curbing the risk of flood—appears to be a purely “extra-negligence” consideration.

example, the financial solvency of the defendant or a class of defendants,²⁹⁶ the existence of a special relationship between litigating parties,²⁹⁷ the youthful age of a defendant,²⁹⁸ the scope of a governing statute (where applicable),²⁹⁹ the illegality or immorality of the tortious conduct,³⁰⁰ social custom,³⁰¹ or any combination of the above³⁰² have been such extra-negligence factors.³⁰³

The second form of duty (Elements (iii) and (iv)) is assessed *independent of negligence or proximate risk considerations*. Intentional tort and strict liability duties often take this form, as do some categorical duty rules in negligence cases that are motivated by extra-negligence factors, such as special relationships.³⁰⁴

²⁹⁶ See *infra* Part IV.F.

²⁹⁷ Lough by Lough v. Rolla Women's Clinic, 866 S.W.2d 851, 854 (Mo. 1993) ("[I]n determining existence of a duty, . . . a relationship between the parties where one is acting for the benefit of another . . . plays a role.").

²⁹⁸ Except where children are engaged in adult activities (such as driving), courts typically hold that children under the age of six or seven are conclusively presumed to lack sufficient risk comprehension to be held liable. See Price v. Kitsap Transit, 886 P.2d 556, 560 (Wash. 1994).

²⁹⁹ This concept—that no rule is intended to remedy each type of conceivable loss or harm—has been advocated particularly in the German civil law system, which refers to it as "Normzweck" ("Legal Purpose"). See, e.g., J.G. WOLF, DER NORMZWECK IM DELIKTSRECHT. EIN DISKUSSIONSBEITRAG (1962); E. VON CÄMMERER, DAS PROBLEM DES KAUSALZUSAMMENHANGE IM RECHTE, BESONDERS IM STRAFRECHTE (1956). But see Kernan v. Am. Dredging Co., 355 U.S. 426, 439 (1958) (holding defendant liable where his tug carried a kerosene lamp closer to the water than the required 8-foot minimum and exploded upon entering petroleum-laden waters, even though statutory prescription was only intended to prevent collisions).

³⁰⁰ Zysk v. Zysk, 404 S.E.2d 721, 722 (Va. 1990) ("[A] party who consents to and participates in an immoral or illegal act cannot recover damages from other participants for the consequence of that act.") (quoting Miller v. Bennett, 56 S.E.2d 217, 218 (Va. 1949). But see Doe v. Roe, 841 F. Supp. 444, 447 n.8 (D.D.C. 1994) (condemning Zysk's categorical bar because it ostensibly frustrates efforts to deter the spread of sexually transmitted diseases).

³⁰¹ See Richard Epstein, *The Path to T.J. Hooper: The Theory and History of Custom in the Law of Tort*, 21 J. LEGAL STUD. 1, 4–5 (1992) (theorizing which classes of defendants should be made liable under social custom).

³⁰² See, e.g., Burgess v. Superior Court, 831 P.2d 1197, 1201 (Cal. 1992) (finding the duty supporting a direct victim's negligent infliction of emotional distress case can have three alternative origins: "[1] [it can be a duty] assumed by defendant, or [2] imposed on the defendant as a matter of law, or [3] [a duty] that arises out of a relationship between the two." (citing Marlene F. v. Affiliated Med. Clinic, Inc., 770 P.2d 278, 282 (Cal. 1989)).

³⁰³ Because it is commonly accepted that judicial administrative ease should not come at the expense of individual justice, it is not usually explicitly cited as an extra-negligence factor.

³⁰⁴ However, it is not altogether clear that distinguishing IIED from NIED for strict liability is sensible. See *supra* note 262.

B. *Establishing Objective Fear Liability for Physical Injurers:
“Significant” Risks, Decision Analysis*

The restrictions typically placed on *fear* damages relate only weakly to the risk of *physical harm* a physical injurer may have caused. To assign liability to a physical injurer, we must focus on whether his act and its associated epistemic risks of *physical harm* translate into legally cognizable *fear*. No court has posed or answered this question yet.

Such an assignment of fear liability to physical injurers is not trivial. The assumption we absolutely must make to get it to work is to imagine that the person placed at physical risk *correctly perceives* that risk (whether he does or does not *correctly* perceive the risk will matter for risk communicators’ liability, but not for a physical injurer’s liability). The reason we do this is that it seems patently unfair that a physical injurer should be liable for fears/risk perceptions that are *not* commensurate with what physical risk he has actually created.

After this assumption is made, we must address three questions:

(1) “Significant” Aggregate Risk (Relative Risk). For any particular epistemic risk of physical harm (e.g., death by drowning, or a broken leg sustained in a motorcycle crash) what is the *aggregate* number of people fearful of that physical risk that is unacceptable to society?

(2) “Significant” Individual Risk (Absolute Risk). Given that that aggregate cut-off for fear is set, how does one determine *which individual* physical injurers who contributed to that aggregate harm have individually created a “significant” risk of fear?

(3) Cost-Benefit Exemption. Even if an individual physical injurer has created a “significant” risk of fear, such that the physical injurer ordinarily would be liable, how does one assess whether an economic justification excuses that specific physical injurer from liability?

Notice what these three questions are getting at. They follow the rule we laid out at the beginning of Part IV: tort law should aim to tackle the most costly/prevalent risks first (here, the risk of fear, which is *derivative* to being at physical risk). Not by accident, a tortfeasor who fulfills all three conditions has also created a “proximate risk” and a “negligence.”

Before we answer these three questions, it is necessary to expose the linguistic tricks courts typically invoke to their own detriments in discussions of risk. Risks are by their nature quantitative.³⁰⁵ Yet courts rarely quantify risks.

³⁰⁵ See *supra* note 60–61 and accompanying text.

They have instead fallen into a pernicious, self-defeating habit of describing risk magnitudes with “quantitative adjectives.”³⁰⁶

Quantitative adjectives lack precision and accuracy. Descriptors such as “significant,” “capable of evoking ‘reasonable’ fear,” “serious,” “large,” “small,” “trivial,” “meaningful,” “substantial,” “inconsequential,” and so forth are simply ineffective standards for classifying risk magnitudes unless backed by actual quantification. Say we wish to discuss a particular level of risk. What level of risk is “significant”? We might be tempted to blurt out a number, say, “fifteen percent,” or “greater than fifty percent,” or, if we are statisticians, “ninety or ninety-five percent” (the traditional values for a “statistically significant” risk).

The correct answer, however, is “*it depends*.” Quantitative adjectives only gain meaning *in a context*.³⁰⁷ Is a quantitative adjectival “bright line” getting at a *proportionate* risk increase (“[A] relative risk of 1.0 means that the agent has no effect on the incidence of disease. . . . [A] relative risk of 2.0 implies a 50% likelihood that an exposed individual's disease was caused by the agent.”³⁰⁸), an *aggregate* level of risk (“[a]sbestosis sufferers . . . have a significant (one in ten) risk of dying of mesothelioma”³⁰⁹), or *both* (“because of plaintiff's exposure to benzidine, his risk of developing bladder cancer had increased from one in ten thousand to one in ten”³¹⁰). In determining whether medical screening is advisable, for instance, physicians focus only on aggregate risk; diagnostic decisions do not turn on *the source* of risk, just that a threshold has been

³⁰⁶ Christopher P. Guzelian et al., *A Quantitative Methodology for Determining the Need For Exposure-Prompted Medical Monitoring*, 79 IND. L.J. 57, 62–63 (2004). In an article about asbestos litigation the authors note that

[j]udicial use of quantitative adjectives as a proxy for assessing the actual increase in risk is a questionable practice. One pair of authors observes that “the court[s] self-consciously rel[y] on a series of quantitative modifiers . . . in an effort to reserve liability for truly deserving cases. Anyone familiar with modern American trial practice will understand that, however well-meaning, this reliance on superlatives will not prevent most well-prepared cases from reaching triers of fact.”

Id. (quoting James A. Henderson, Jr. & Aaron D. Twerski, *Asbestos Litigation Gone Mad: Exposure-Based Recovery for Increased Risk, Mental Distress, and Medical Monitoring*, 53 S.C. L. REV. 815, 845 (2002)).

³⁰⁷ The exceptions are “probable,” and “likely,” which in legal vernacular are understood to mean “greater than fifty percent.” Even accurate quantitative terms like these, however, do nothing to indicate whether we should take action as a result of that risk frequency. Quantification of risk is a necessary, not a sufficient, step for establishing policy.

³⁰⁸ *Hall v. Baxter Healthcare Corp.*, 947 F. Supp. 1387, 1403 (D. Or. 1996) (quoting Bailey, et al., *Reference Guide on Epidemiology*, REFERENCE MANUAL ON SCIENTIFIC EVIDENCE at 168).

³⁰⁹ *Ayers*, 538 U.S. at 142.

³¹⁰ *Clark v. Taylor*, 710 F.2d 4, 14 (1st Cir. 1983).

transgressed.³¹¹ However, as we will now establish, fair apportionment of fear liability to physical injurers requires *both* aggregate and relative risk considerations.³¹²

1. "Significant" Risk of Fear

The late Harvard philosopher Robert Nozick once pointed out that fear of a specific physical harm usually results only from perceiving an *aggregation* of risks, not just the risk resulting from one physical injurer's act:

[A] risky action might present too low a probability of harm to any given person to cause him worry or fear. But he might fear a large number of such acts being performed. Each individual act's probability of causing harm falls below the threshold necessary for apprehension, but the combined totality of the acts may present a significant probability of harm. If different persons do each of the various acts in the totality, no one person is responsible for the resultant fear. Nor can any one person easily be held to cause a distinguishable part of the fear. One action alone would not cause fear at all due to the threshold, and one action less

³¹¹ This observation is important for medical monitoring claims. Medical monitoring is periodic diagnostic screening for latent illnesses or medical conditions that some courts award when a negligent tortfeasor places an individual at increased risk. See Christopher P. Guzelian et al., *A Quantitative Methodology for Determining the Need For Exposure-Prompted Medical Monitoring*, 79 IND. L.J. 57 (2004). Courts frequently require a plaintiff be at "significantly increased" risk of a life-threatening disease before medical monitoring is awardable. *Bourgeois v. A.P. Green Indus.*, 716 So. 2d 355, 360 ("Bourgeois I") (La. 1988) ("[P]laintiff [must] suffer[] a significantly increased risk of contracting a serious latent disease"); *Hansen v. Mountain Fuel Supply Co.*, 858 P.2d 970, 979 (Utah 1993) ("[T]he plaintiff must prove that the exposure was of sufficient intensity and/or duration to increase his or her risk of the anticipated harm significantly over the plaintiff's risk prior to exposure."); cf. *In re St. Jude Medical, Inc.*, No. 01-1396, 2003 U.S. Dist. LEXIS 5188, at *38 (D. Minn. Mar. 27, 2003) (only requiring "an increased risk of harm" to establish "an injury in fact"). The premise of our article was that a risk of future disease is "significant" *in the context of deciding whether to medically monitor* only if a widespread monitoring program based on a particular, quantified level of *absolute* risk for a specified disease would be net-beneficial from a health-related standpoint.

³¹² *Accord Sutcliffe v. G.A.F. Corporation*, 15 Phila. 339, 345-46 (1986). The court in *Sutcliffe* held that "fear of developing cancer and mesothelioma is directly related to the issue of risk," and that

when attempting to establish increased risk of harm . . . by statistical evidence, it is imperative that statistics be given for both the plaintiff and for the average individual (the base rate). One without the other is of no statistical or probative value since it would require sheer speculation as to the missing statistic in attempting to determine the actual increase in risk and whether such a risk is of sufficient significance . . .

would probably not diminish the fear. [There is] a case for the prohibition of this *totality* of activities. But since parts of the totality could occur without ill consequence, it would be unnecessarily stringent to ban each and every component act.³¹³

Naturally *some* people will always become fearful when they suffer risk perceptions. (Remember, our assumption for physical injurer fear liability is that every at-risk person experiences perfectly accurate risk perceptions.)³¹⁴ The question is: as a society, how much fear should we fail to compensate; where should we set this aggregate “significance” cut-off (“*fear floor*”) for a particular fear? We anticipate two problems—one more trivial than the other—in establishing this aggregate cut-off.

First, the amount of disutility one suffers if one does indeed incur the harm will influence the aggregate cut-off. Should we accept that ten percent of the fearful may not recover for fears of contracting cancer? Is the acceptable cut-off higher (say, fifteen percent) for agoraphobia that results from being insulted harshly in front of a large audience? And how do we set these cut-offs?

Fortunately, these considerations need not greatly weigh on judicial minds; courts typically recognize fears only of physical harms or death, which—within reason—are relatively comparable in how much disutility they afford. (Agoraphobia would probably not be compensable, for instance, because it is not a fear of physical injury or death.)³¹⁵ Further, although courts have failed to invoke it thus far, *EBL-based* analysis should be able to nail down what percentage of people *do* become genuinely afraid of a certain risk when the risk is shown to have a certain likelihood.³¹⁶ In the future such questions will be

³¹³ ROBERT NOZICK, ANARCHY, STATE, AND UTOPIA 73–74 (1974).

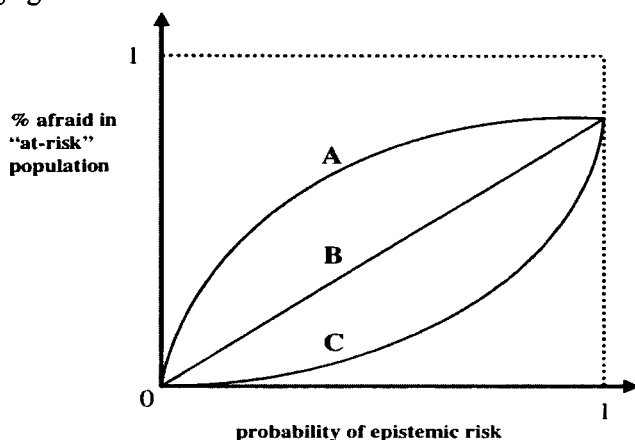
³¹⁴ *Lawson v. Mgmt. Activities, Inc.*, 81 Cal. Rptr. 2d 745, 748 (Cal. 1999) (“No one, saint or sinner, can go through life without ‘negligently’ inflicting emotional distress on others.”).

³¹⁵ Courts have severely constrained the range of risk disutility to only two kinds of harms: serious physical injury or death. *See Olson v. EG&G Idaho, Inc.*, 9 P.3d 1244, 1250 (Idaho 2000) (denying woman’s agoraphobia claim stemming from employment termination for “poor performance” because “the jury was provided with evidence which it could have relied upon to determine that [the plaintiff’s] emotional distress was not as severe as indicated by [the plaintiff’s] psychiatrist.”); *cf. Ballinger v. Palm Springs Aerial Tramway*, 269 Cal. Rptr. 583, 588–89 (Cal. Ct. App. 1990) (awarding emotional damages for claustrophobia *deriving from* initial immediate fear for plaintiff’s own safety within zone of danger during aerial tramway accident) (unpublished opinion); *Curtis v. MRI Imaging Servs. II*, 956 P.2d 960, 963–64 (Or. 1998) (where physicians had assumed special duty to patient and claustrophobia was recognized risk of MRI procedure, failure to warn of this mental health risk is recoverable).

³¹⁶ There are already several evidence-based journals on mental health and psychiatric care that are being published. More are sure to follow as EBL gains acceptance over time. *See, e.g., TRENDS IN EVIDENCE-BASED NEUROPSYCHIATRY available at*

answered objectively by EBL-based mental health evidence; gone will be the days that the Supreme Court speculates, without evidence beyond the justices' own subjective impressions, that a ten percent epistemic risk of mesothelioma would cause fear in the "reasonable" person.³¹⁷ The graph below reveals three hypothetical shapes such an "aggregate fear curve" might take:³¹⁸

Figure 12: Three Hypothetical EBL-based Fear Curves (A,B,C): Establishing Aggregate Fear Floors



The second obstacle to setting an aggregate fear floor is more difficult to overcome—determining exactly *what* aggregate level of fear is socially unacceptable (and some natural rights philosophers reject *any* non-zero amount). Nozick asks:

[W]hat is the magnitude of the specified [aggregate cutoff] value? The harm of the least significant act (yielding only that harm for certain) that violates a

<http://www.tenmag.com/index.php3>; Centre for Evidence Based Mental Health *available at* <http://cebmh.warne.ox.ac.uk/cebmh/>. Without EBL, courts wrangle imprecisely to determine whether expert findings and testimony meet evidentiary standards. *See Black v. Rhone-Poulenc, Inc.*, 19 F. Supp. 2d 592, 606 (S.D. W. Va. 1998) (having to conduct lengthy, unfocused examination before rejecting expert witness's testimony and report on mental health impacts of exposure to toluene caused in plant fire as "misleading pseudoscientific research" under *Daubert*).

³¹⁷ *Norfolk & Western R. Co. v. Ayers*, 538 U.S. 135, 155–56 (2003) ("Asbestosis [which indicates a 9–10% lifetime risk of contracting mesothelioma] is 'a chronic, painful, and concrete reminder that [a plaintiff] has been *injuriously* exposed to a substantial amount of asbestos, a reminder which may both qualitatively and quantitatively intensify his fear.'") (quoting *Eagle-Pitcher Industries, Inc. v. Cox*, 481 So.2d 517, 529 (Fla. Ct. App. 1985)).

³¹⁸ Which curve best reflects the reality of a particular fear is EBL-dependent.

person's natural rights? This construal of the problem cannot be utilized by a tradition which holds that stealing a penny or a pin or anything from someone violates his rights. That tradition does *not* select a threshold measure of harms as a lower limit, in the case of harms certain to occur. It is difficult to imagine a principled way in which the natural-rights tradition can draw the line to fix which probabilities impose unacceptably great risks upon others. This means that it is difficult to see how, in these cases, the natural-rights tradition draws the boundaries [a threshold] focuses upon.³¹⁹

In reality, we do not try to prohibit *all* of *every* social aggregate of harm. We are apparently comfortable with allowing some classes and frequencies of epistemic risks to go unchecked, even though we know (statistically speaking) that some people *will* suffer harm.

Natural rights thinkers, however, contend that *any* non-zero level of unpunished risk creation is unacceptable. As a result, this debate's philosophical nature makes it difficult to set a *particular* level or range, and even less obvious *on what basis to do so*. The result, as we acknowledged in the outset to Part IV, is an arbitrary delineation between redressable and unrecompensed fears.³²⁰

We do not pretend to have ambitions to solve this dilemma, which springs from more fundamental tensions than we care to attack.³²¹ After looking at the EBL-based fear curve for a *particular* fear, judges will have to decide what *quantified* aggregate level of social fear of that specific harm they are philosophically uncomfortable with permitting, and set the corresponding *quantified* cut-off for how much physical risk to allow.³²²

³¹⁹ ROBERT NOZICK, ANARCHY, STATE, AND UTOPIA 75 (1974).

³²⁰ *Accord id.* ("One might plausibly argue that beginning with probabilities that may vary continuously and asking that some line be drawn misconstrues the problem and almost guarantees that any position of the line (other than 0 or 1) will appear arbitrary."); *see also* Indus. Union Dep't v. API, 448 U.S. 607, 655 n.62 (1980):

[W]hile [a regulatory agency] must support its finding that a certain level of risk exists by substantial evidence, we recognize that its determination that a particular level of risk is 'significant' will be based largely on policy considerations. At this point we have no need to reach the issue of what level of scrutiny a reviewing court should apply to the latter type of determination.

Id.

³²¹ In Section IV.B.2, however, we will state why we believe that the aggregate fear floor's "significance" should be set near *zero* for the exceptional case of skewed risk communication.

³²² *See, e.g.,* Temple-Island Products Corp. v. Carter, 993 S.W.2d 88, 90 (Tex. 1999) (rejecting fear of asbestos-related illness claim of asymptomatic plaintiff, even upon accepting testimony of expert "that the chances of [plaintiff's] developing a disease as a result had increased from one in a million, which he estimated to be the risk that a person would ever

There is another reason Nozick's "aggregate fear floor" is difficult to identify in practice: it is a completely idealized benchmark that is not necessarily the same as the cut-off set in any courtroom. Fear is caused in the aggregate, liability is apportioned singularly. Establishing the "significance" of a physical risk for causing fear *in the context of establishing individual liability* incorporates considerations beyond those that go into setting *aggregate* "significance." For instance, might we allow a physical injurer to engage in certain acts whose likelihood of causing fear exceeds the fear floor (e.g., the floor is ten percent, the person's act causes eleven percent risk of that fear)? Conversely, would we ever want to hold a specific physical injurer liable even if the epistemic risk of physical harm he has created does not meet the fear floor (e.g., the floor is ten percent, the person's act causes an eight percent risk of that fear)?³²³

Two kinds of considerations can compel a court to deviate from its ideal aggregate cut-off in meting out individual liability. One is cost-benefit analysis; sometimes a risk that percentage-wise transcends the fear floor is justified because the expected benefits from that act outweigh the predicted fear harm—and other harms—that the act may cause. We discuss this in the next section.

The second consideration is the *absolute* number of people a physical injurer has placed at physical risk (and hence, at risk of warranted fear). Say, for instance, that physical injurer *A* by his careless actions has placed 100 people at risk of contracting cancer, and that the fashion in which he did is known by EBL to cause eleven percent of the same to become fearful, where the aggregate fear floor is set at ten percent. Assume physical injurer *B* has negligently placed 100 *million* people at risk of contracting cancer, and that EBL predicts nine percent will become fearful. *A* will cause eleven people to suffer genuine fear harms, but *B* will cause nine *million* people to suffer the same fears. (Assume that the cost-benefit ratios, scaled accordingly for the magnitude of each injurer's act, are identical.) Should *A* be liable while *B* is not?

As regulatory agencies have indicated,³²⁴ our answer is probably "no." Applying an aggregate cut-off *equally* to all physical injurers would enable a behemoth injurer to escape liability simply because he doesn't meet the one-size-

develop a disease from asbestos exposure not occupationally related, to about one in 500,000 for the next ten or fifteen years, and as much as one in 100 over twenty or thirty years.").

³²³ There will also sometimes be an issue whether the *individual* fear curve (i.e., "specific cause") is the same as the aggregate fear curve. If there is a difference, one may have to take this into account in setting the "benchmark" fear floor in the specific defendant's circumstances. EBL acknowledges and accommodates such differences between general and specific causation. See *supra* note 79.

³²⁴ Curtis C. Travis et al., *Cancer Risk Management: A Review of 132 Federal Regulatory Decisions*, 21 ENVTL. SCIENCE & TECH. 415, 419 (1987) (finding an inverse relationship between the EPA and other regulatory agencies' cut-offs for acceptable risk likelihoods and the size of the at-risk populations).

fits-all *percentage* threshold. This judicial practice would be ill-advised. An *individual* fear floor (or range) must be constructed along a sliding scale based on *how many* individuals a physical injurer puts at physical risk, with the aggregate fear floor serving only as the initial benchmark. We will not define this sliding scale's algorithm here, but our proposal is in the spirit of antitrust law, where some actions regarded as lawfully "competitive" by companies with little market power are unlawfully "monopolistic" when undertaken by larger competitors.³²⁵

We should not be surprised that fear cut-offs set for individual defendants can deviate in practice, sometimes substantially, from the theoretical aggregate floor. We implore judges, however, to *first* derive the aggregate floor, and *then* determine whether individual defendants' circumstances merit upward or downward departure from that "significance" benchmark. Only by this method can one effectively separate the distinct considerations that go into establishing the aggregate and individual "significances" of an epistemic risk of physical harm in causing fear.

Courts have not come near to teasing apart aggregate and individual fear floor determinants as we have. Instead, the usual judicial standard conflates the many determinants of a "significant" individual risk of fear by prohibiting recovery unless a "reasonable person" similarly situated would suffer emotional harm.³²⁶ We need not repeat our admonishment about quantitative adjectives. A "reasonable" person standard conceals the need to address the implicit natural rights versus legal realism tension. It doesn't reveal that a sliding scale is required to determine individual fear liability. The "reasonable person" standard simply allows a judge to impose his unquantified subjective beliefs about how much fear a given act will cause.³²⁷ We should much prefer a quantified EBL-based method

³²⁵ Areeda and Hovenkamp, for example, define market power as "the ability to raise price by restricting output." See generally PHILLIP E. AREEDA & HERBERT HOVENKAMP, IIA ANTITRUST LAW: AN ANALYSIS OF ANTITRUST PRINCIPLES AND THEIR APPLICATION §5A 131 (2d ed. 2002). By analogy, a tortfeasor with "fear power" has the resources and means to put many people at risk of fear by his act(s).

³²⁶ See, e.g., *Sinn v. Burd*, 404 A.2d 672, 683 (Pa. 1979) (limiting recovery for emotional distress to circumstances "where a reasonable person 'normally constituted, would be unable to adequately cope with the mental stress engendered by the circumstances' of the event.") (quoting *Leong v. Takasaki*, 520 P.2d 758, 764 (Haw. 1974)).

³²⁷ Antonin Scalia, *The Rule of Law as a Law of Rules*, 56 U. CHI. L. REV. 1175, 1180–81 (1989). Justice Scalia notes:

[W]hen an appellate judge comes up with nothing better than a totality of the circumstances test to explain his decision, he is not so much pronouncing the law in the normal sense as engaging in the less exalted function of fact-finding. That is certainly how we describe the function of applying the most venerable totality of the circumstances test of them all—the 'reasonable man' standard for determining negligence in the law of torts.

to the reasonable person standard in establishing which physical injurers have created “significant” (and thus, per our definition of “proximate risk,” potentially liable) risks of fear.

2. Excusing “Significant” Risks of Fear: Decision Analysis

Even if a defendant’s act creates an individually “significant” risk, he sometimes will be excused from liability because of cost-benefit considerations. Nozick explains,

[I]t might be decided that mining or running trains is sufficiently valuable to be allowed, even though each presents risks to the passerby no less than compulsory Russian roulette with one bullet and n chambers (with n set appropriately), which is prohibited because it is not sufficiently valuable. There are problems in mak[ing] these decisions The problems could lessen if the overall states (totality below the threshold, and so on) can be reached by the operation of some invisible-hand mechanism. But the precise mechanism to accomplish this has yet to be described³²⁸

Learned Hand long ago popularized a rudimentary cost-benefit test.³²⁹ A persistent criticism of Hand’s test (which Nozick recognized when he said that no “precise” mechanism for such analysis exists) is its denomination of physical harms and economic/property harms on a single monetized scale.³³⁰ We encourage use of “decision analysis,” which avoids the problems of Hand’s test,³³¹ but still appropriately exonerates certain physical injurers from liability,

³²⁸ ROBERT NOZICK, *ANARCHY, STATE, AND UTOPIA* 74 (1974).

³²⁹ See *United States v. Carroll Towing*, 159 F.2d 169, 173 (2d Cir. 1947) (holding that the risk of a defendant’s conduct is calculated as a combination of (i) the magnitude of damage that might occur; (ii) the probability that a certain magnitude of damage will occur).

³³⁰ See, e.g., Kenneth W. Simons, *Negligence*, 16 SOC. PHIL. & POL’Y 2, 52, 80 (1999) (objecting that monetization of physical risks turns “moral analysis into a bloodless form of calculation,” but noting that such “qualitative” balancing as described would avoid this problem); Gregory C. Keating, *Reasonableness and Rationality in Negligence Theory*, 48 STAN. L. REV. 311, 346 (1996) (“[I]t is neither natural nor necessary to conceptualize accident and precaution costs in economic terms.”). But see MATTHEW D. ADLER, *FEAR ASSESSMENT: COST-BENEFIT ANALYSIS AND THE PRICING OF FEAR AND ANXIETY*, U. Penn., Inst. for Law & Econ. Research Paper 03-28; AEI-Brookings Joint Center Working Paper No. 03-12 (2003) (contending that fear harms corresponding to epistemic risks of physical harms can be consistently monetized), available at: <http://ssrn.com/abstract=466720>.

³³¹ Decision analysis allows quantification of estimated risk “losses” in terms of risk. It is simultaneously capable of itemizing estimated monetary values for economic losses. But it does not require that the analyst reduce risks and property harms to a singular monetary scale, as Hand’s formula necessarily must. In this fashion, decision analysis can contribute to

even for some injurers who have created “significant” risk of fear by placing people at physical risk.

Decision analysis is best understood through case examples,³³² but its conceptual thrust is that it is a robust,³³³ evidence-based, and widely accepted methodology used to determine whether leaving an act unaltered is *relatively* less socially costly than modifying the act so as to mitigate some or all of the act’s associated “significant” risks (such as a risk of fear). Stated formally, a physical injurer has no liability if the *expected net social cost*³³⁴ after any feasible

unprecedented judicial consistency and accuracy in gauging negligence without sacrificing reflection on the “moral” nature of many injuries. *Cf. Iletto v. Glock, Inc.*, 349 F.3d 1191, 1206 (9th Cir. 2003) (holding without conducting quantified decision analysis that handgun manufacturers’ distribution of guns to police departments, which ostensibly allows for easier criminal access to used guns, “is outweighed by the health and safety interests of potential victims of gun violence at the hands of prohibited purchasers.”); Joseph L. Arvai et al., *Testing a Structured Decision Approach: Value-Focused Thinking for Deliberative Risk Communication*, 21 RISK ANALYSIS 1065, 1067 (2001) (finding that focus group use of “value-focused thinking”—a crude and sometimes non-quantitative form of decision analysis can help to improve public perceptions of risk).

³³² See generally DETLOF VON WINTERFELDT & WARD EDWARDS, *DECISION ANALYSIS AND BEHAVIORAL RESEARCH* (1986); RONALD A. HOWARD & JAMES MATHESON (EDS.), *THE PRINCIPLES AND APPLICATIONS OF DECISION ANALYSIS* (1983); Jerome P. Kassirer et al., *Decision Analysis: A Progress Report*, 106 ANNALS INT. MED. 275, 278–86 (1987); Stephen G. Pauker & Jerome Kassirer, *Decision Analysis*, 316 NEW ENG. J. MED. 250, 250 (1987); H.C. Sox, *Decision Analysis: A Basic Clinical Skill?*, 316 NEW ENG. J. MED. 271, 271 (1987); Ronald A. Howard, J.E. Matheson, D.W. North, *The Decision to Seed Hurricanes*, 176 SCIENCE 1191, 1192 (1972).

³³³ Stephen G. Pauker, *Deciding About Screening*, 118 ANNALS INT. MED. 901, 901 (1993) (“A formal decision analysis can help structure the problem, organize data, elucidate tradeoffs, and estimate benefits and costs.”). Decision analysis has been shown in medicine to be a particularly helpful alternative to conducting costly and time-consuming controlled clinical trials when a physician wishes to assess whether a proposed medical intervention is more likely to be of benefit than of harm to patients. See Peter Doubilet & Barbara J. McNeil, *Clinical Decisionmaking*, 23 MEDICAL CARE 648, 648 (1985). Doubilet and McNeil note:

Decision analysis is most applicable to clinical questions that cannot be answered by appealing directly to the results of clinical trial or to a large data base. This can occur because no trial has been carried out or because the patient in question differs substantially from the populations in existing sources of data.

Id. As such, decision analysis’s predictive power is directly translatable to determining negligence. It could be used to predict whether modification or elimination of an act that has caused harm is socially preferable to the alternative of allowing the act to proceed unchanged.

³³⁴ “Net social cost” is measured by subtracting “total social costs” (the social disutility suffered from a defendant’s act) from “total social benefits” (the social utility gained from a defendant’s act). A person causing a significant epistemic risk is negligent whenever a modification could have been made to the underlying act that would have resulted in a *relative*

modification to his act is higher than the expected net social cost of leaving the act unchanged. (Conversely, if some viable modification would have made the act less costly, the actor is liable.) Purely for simplicity, we will consider only an act's costs, not its benefits.³³⁵ This simplifying assumption means that individual liability exists wherever the modified act's expected *total* social cost is less than the unaltered act's expected *total* social cost.³³⁶

An act's total social cost can actually *increase* when one tries to reduce a particular risk. This is because of "*risk covariance*": eliminating the "significance" of one risk can make another "significant."³³⁷ For example,

decrease in net social cost. Thus, it is theoretically possible that the "net social cost" is *positive* (i.e., a net social *benefit*), yet a person is still negligent.

³³⁵ This assumption obviously need not be true in reality. A modification or elimination of an act could have disparate impacts on social benefits and social costs associated with it. Decision analysis is fully capable of addressing both. Dobbs explains well why we are making this assumption: "The usefulness or . . . [benefit] of conduct actually includes the costs saved by not adopting some other course of conduct, but it is sometimes clearer if . . . [benefit] and cost of greater safety are stated separately." DOBBS, *supra* note 163, § 144, at 337 n.5.

³³⁶ A "total social cost" is derived for *both* the unaltered act *and* each proposed modification of that act. The "total social cost" associated with the unmodified act (" TC_{act} ") is a vector of all " n " significant epistemic risks (" R_i " which includes a risk of fear) along with a vector of all " m " property damages, (" P_j "):

$$TC_{act} = \vec{R}_i + \vec{P}_j, \quad i \in \{1, \dots, n\}, j \in \{1, \dots, m\}$$

Assuming only for notational simplicity that the defendant would suffer no transactional (out-of-pocket) financial costs by being forced to modify his act, the "total social cost" (" TC_{mod} ") of each proposed and EBL-justified *modification* of the act is expressed similar to the unmodified total social cost equation above, but the number and magnitudes of some or all of the associated "significant" risks must be assessed for *each* modification and are not necessarily the same across modifications. Thus, proposed modification #1 might have s "significant" epistemic risks associated with it, and t property costs, and so on for every other possible modification. (The vector sizes of the modifications may or may not be equal to the vector sizes of the unmodified act. There is no way of universalizing how a modification will affect the *number* of significant epistemic risks, or the *number* of different property damages.) The final EBL-known modification, the z^{th} possible modification, has u "significant" risks associated with it, and v property costs:

$$TC_{mod\ 1} = \vec{R}_k + \vec{P}_l, \quad k \in \{1, \dots, s\}, l \in \{1, \dots, t\}$$

$$TC_{mod\ z} = \vec{R}_a + \vec{P}_b, \quad a \in \{1, \dots, u\}, b \in \{1, \dots, v\}$$

Observe from this process that it is still possible to reduce the expected utilities of a risk to a common scale, as Hand did. The power of decision analysis is that that computation is not *required*; one has the ability to tabulate risks in risk-terms, rather than to monetize them.

³³⁷ See generally RISK VERSUS RISK: TRADEOFFS IN PROTECTING HEALTH AND THE ENVIRONMENT *passim* (John D. Graham & Johnathan B. Wiener eds., 1995) (contending that risk covariance is ubiquitous).

designing a street-corner lamp pole to collapse easily in a vehicular collision decreases the risk of injury to drivers, but the modification may simultaneously convert a previously insignificant risk of injury to nearby pedestrians into one that is significant.³³⁸ Modifications, however, do not always cause other risks to become significant. Bailing water out of a flooded lifeboat into the ocean substantially reduces the risk of drowning, but only inconsequentially increases the risk of coastal flooding.³³⁹

If communicating an act's associated physical risks would cause a potentially "significant" risk of fear, there is a trade-off—a risk covariance called "*fear amplification*"—between reducing risks of physical harm and spreading fear. Usually, communicating risk information abates risks of physical harm. For instance, the government issues terrorism and travel advisories, forecasters predict paths of impending hurricanes, and so forth. This permits risk avoidance, mitigation, or other preparation—to continue these examples, by preparing an emergency kit, avoiding travel to hostile countries, or boarding up windows and moving inland as a hurricane approaches. Yet the *same* communication can cause fear even in individuals not at immediate physical risk.³⁴⁰

Intuitively, there seems a need to establish a "bright-line" judicial rule about when to permit risk communication, rather than to submit each circumstance to decision analysis. Robert Nozick suggested a regime in which victims of physical harms were "compensated immediately, and also bribed to keep silent" might work—nonvictims wouldn't know about the injury so they couldn't be fearful, even if they were at future risk of the same harm.³⁴¹ Nozick's aggressive

³³⁸ *Bernier v. Boston Edison Co.*, 403 N.E.2d 391, 396 (Mass. 1980) (concluding that pedestrian risk of injury became too significant and hence defendant was negligent for designing breakaway pole to protect drivers).

³³⁹ See *Indiana Consolidated Ins. Co. v. Matthew*, 402 N.E.2d 1000, 1003 (Ind. Ct. App. 1980) (finding no negligence where defendant immediately fled plaintiff's garage after mower caught fire instead of pushing mower outside first, because the expected risk of harm to the garage was less than the expected risk of injury tending to a potentially explosive mower marginally longer).

³⁴⁰ Fear amplification also includes communication that needlessly reaches persons who *even in the future* will not be at risk of the physical harm they fear.

³⁴¹ ROBERT NOZICK, *ANARCHY, STATE, AND UTOPIA* 67 (1974). Nozick notes that:

Even under the strongest compensation proposal which compensates victims [of physical harms] for their fear, some people (the nonvictims) will not be compensated for their fear. . .

Can this result be sidestepped? For example, there would not be this increase in fear if victims were compensated immediately, and also bribed to keep silent. Others wouldn't know the act had been done, and so it wouldn't render them more apprehensive by leading them to think that the probability of its happening to them was higher.

muzzling proposal is not optimal. *Under*-communication of risks has harmful effects too: uninformed risk-taking and bravado.³⁴² By *completely* quashing risk information, one also probably violates First Amendment principles.³⁴³ Finally, we have a sense that a successful marginal reduction in risks of physical injury made possible by risk communication justifies a corresponding marginal increase in fear. For all of these reasons, we advocate a legal rule that always permits risk communication if it fosters risk perceptions consistent with the best evidence (EBL).³⁴⁴

But what if risk communication is *ineffective*? Like all risk communication, communication that skews perceptions increases fear. Unlike accurate risk information, however, skewed information does *not* reduce physical risks. Quite the opposite: it can heighten *both* fear *and* physical risks³⁴⁵ (including the physical risk underlying a fear³⁴⁶), thereby *increasing* total social costs! This

³⁴² See *supra* note 143.

³⁴³ Detailed analysis of risk communicators' free speech rights, while important to the issue of risk communicator liability for fear, is not undertaken in this introductory article.

³⁴⁴ Just because a risk communication is *accurate* doesn't mean it won't cause unjustified fear. See, e.g., Judith A. Bradbury et al, *Trust and Public Participation in Risk Policy Issues*, in *SOCIAL TRUST AND THE MANAGEMENT OF RISK* 123–27 (George Cvetkovich & Ragnar E. Löfstedt eds., 1999). Instead, as we touched on briefly in Section II.D, a risk communicator must consider cognitive psychology in his communication—perhaps even speaking somewhat inaccurately, if required—to effect an accurate *perception* of risk. A fuller discussion of a risk communicator's duty will be handled in a future article.

³⁴⁵ See, e.g., George M. Gray & David P. Ropeik, *Dealing With the Dangers of Fear: The Role of Risk Communication*, 21 *HEALTH AFFAIRS* 106, 106 (2002). Gray & Ropeik argue for greater emphasis on effective risk communication because:

[F]ear has powerful public health implications. [After September 11th,] [p]eople chose to drive instead of flying, thereby raising their risk of injury or death. Thousands took broad-spectrum antibiotics to prevent possible anthrax infections, thereby accelerating antimicrobial resistance. Such potentially harmful actions were taken by people seeking a sense of safety because they were afraid. . . . [Effective risk communication] empowers people to make wiser choices in their own lives, and to support wise choices by society in applying limited resources to maximize public and environmental health.

Id.

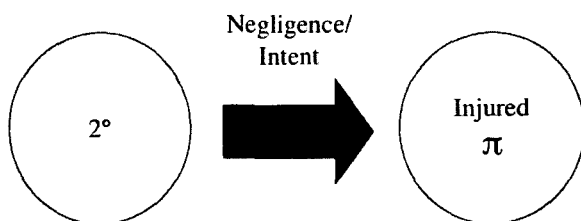
³⁴⁶ For instance, the “Virgin Cure Myth”—that unprotected sexual intercourse with a person perceived to be a virgin will cure HIV/AIDS—is believed by 25% of young South Africans, and has contributed to child rape and HIV incidence in Africa. See Mike Earl-Taylor, *The Virgin Cure Myth*, *SCIENCE IN AFRICA*, Issue 16 (April 2002), available at <http://www.scienceinafrica.co.za/2002/april/virgin.htm>. See also *supra* note 80 and accompanying text (noting that dogmatically prescribed estrogen therapy for postmenopausal women not only did not have the putative cardioprotective effect, but actually *increased* cardiovascular risk).

means there is little, if any, justification for *misleading* risk communication.³⁴⁷ Accordingly, we must assess whether and how an errant risk communicator should share fear liability. Courts simply haven't addressed this issue.³⁴⁸ We will do so in the remaining sections.

C. Enabling Tort: Allocating Liability to Multiple Tortfeasors

Traditional liability involves two dance partners: an injured plaintiff ("π") and a tortfeasor (because we're going to have more dance partners in a minute, call him the "Secondary" ("2°")). This liability arrangement appears as:

Figure 13: Traditional Tort



³⁴⁷ Harvard physicist Richard Wilson explains there are also wasteful *economic* repercussions of skewed risk in the context of environmental lawsuits:

If lawsuits had succeeded in assigning blame for electromagnetic field exposure and awarding sums as large as those for asbestos or breast implant claims, the expenditure could have exceeded the entire federal research budget. This is not only a misallocation of research funds but also of intellectual resources. Environmental scientists spend time either on promoting bogus claims or defending part of society against the lawsuits. Far better would be to spend time on understanding the way arsenic causes human cancer, or trying to eliminate the massive arsenic problem in Bangladesh.

Wilson, *supra* note 59, at 519.

³⁴⁸ For example, in *Metro North*, the Supreme Court focused only on the connection between the extent of cancer risk stemming from exposure and fear. The Court failed to realize, even though it unknowingly stated as much, that risk communication played an essential role in causing the plaintiff's fear, and never questioned how accurate that communication was. See *Metro*, 521 U.S. at 427. ("Since 1987, when he attended an 'asbestos awareness' class, [the plaintiff] has feared that he would develop cancer—and with some cause . . . [for] the exposure created an *added* risk of death due to cancer, or to other asbestos-related diseases . . .").

In a thoughtful article, however, Stanford law professor Robert Rabin has described a hugely consequential shift, which he calls “enabling tort,” in how the modern common law of torts assigns negligence-based liability.³⁴⁹

[Enabling tort] comes to full flowering in our risk-saturated closing decades of the twentieth century—an epoch in which our perceptions of hazards in the neighborhood, workplace, and environment have reached unprecedented heights. In this milieu, blameworthiness is not so readily confined as was the case in times past. Beyond the immediate perpetrator of harm, the victim perceives the individual, or more often, the enterprise, that set the stage for the suffering that unfolded. The Enabler.³⁵⁰

Blaming Enablers adds a third, fourth, or more parties to the liability dance, depending on how far we want to extend “reachback” liability. Rabin observes the Enabler does not *himself* commit the final act leading to injury,³⁵¹ but is still liable for bolstering another’s tortious act.³⁵² Assuming there is one “Enabler” (we will symbolize him as the “Primary” (“1^o”)), we must modify Figure 13’s traditional tort liability scheme:

³⁴⁹ Robert L. Rabin, *Enabling Torts*, 49 DEPAUL L. REV. 435, 439–50 (1999). This shift was actually *predicted* first by Hart and Honoré. See H.L.A. HART & TONY HONORÉ, CAUSATION IN THE LAW 284 (2d ed. 1985). The authors note that:

[T]he law is in a transition from a stage at which liability was based almost exclusively on negligently causing harm to one in which it is based not merely on causing harm but also on exposing others to a risk of harm by providing other persons or things with the opportunity of doing harm. Probably the future will see a considerable extension of the latter form of liability.

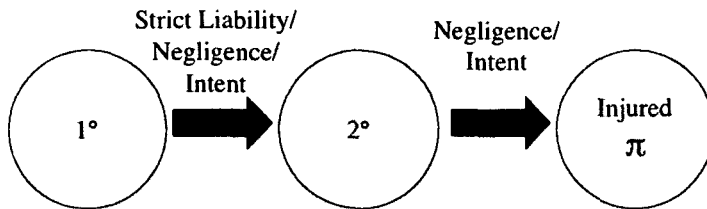
Id.; see also LEONARD TALMY, TOWARD A COGNITIVE SEMANTICS 504–09 (2000) (describing same).

³⁵⁰ Rabin, *supra* note 349, at 437–38.

³⁵¹ Thus, enabling torts are not the same as “legally concurrent” causes of injury. See *Watts v. Smith*, 134 N.W.2d 194, 200 (Mich. 1965) (noting that plaintiff suffering an indivisible injury in two unrelated car crashes on the same day can recover jointly and severally from the unrelated tortfeasors).

³⁵² “[T]he essential element in enabler responsibility is that a dangerous ‘instrumentality’ has been put in the hands of a third-party with a foreseeable expectation that a ‘remote’ victim will suffer harm.” Rabin, *supra* note 349, at 450. Rabin’s requirement that victims be “remote” (i.e., “innocent”) has been relaxed in many circumstances. For example, in recent tobacco suits, individual smokers have been able to recover, despite their own complicity in smoking, because of negligent or intentional concealment by the tobacco industry of internally generated “addiction” data. Criminal law too has assigned liability for those who negligently assist suicide victims. See *infra* note 353 and accompanying text.

Figure 14: Facilitated Tort



When we reflect on Figure 14, we realize the general *form* enabling tort takes—“*facilitated tort*”—is not new. For example, law penalizes *intentional* facilitation of a crime (think of conspiracy),³⁵³ and manufacturers are strictly liable for defective product designs, even if another person is the direct cause of injury.³⁵⁴ Enabling tort, conversely, has only recently begun to emerge. An Enabler suffers liability when it is specifically his *proximate risk* that has facilitated another’s tort:

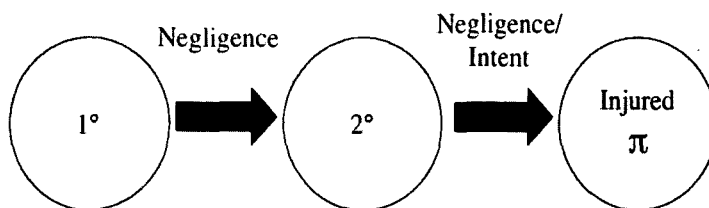
³⁵³ See MODEL PENAL CODE § 5.03(1). The section states that:

A person is guilty of conspiracy with another person or persons to commit a crime if with the purpose of promoting or facilitating its commission he: (a) agrees with such other person or persons that they or one or more of them will engage in conduct that constitutes such crime or an attempt or solicitation to commit such crime; or (b) agrees to aid such other person or persons in the planning or commission of such crime or of an attempt or solicitation to commit such crime.

Id.

³⁵⁴ For example, handgun manufacturers have been sued under strict liability theories for failure to put trigger-locks on their guns. Compare Turley & Harrison, *Strict Liability of Handgun Suppliers*, 6 HAMLINE L. REV. 285, 292 (1983) (proposing strict liability for handgun manufacturers under the product liability principles of Restatement (Second) of Torts § 402A (1964)), with *Martin v. Harrington and Richardson, Inc.*, 743 F.2d 1200, 1206 & n.2 (7th Cir. 1984) (Cudahy, J., concurring) (discussing possible strict liability of handgun manufacturers under the ultrahazardous activity principles of Restatement (Second) of Torts §§ 519–520 (1976)). See also *Soule v. Gen. Motors Corp.*, 882 P.2d 298 (Cal. 1994) (holding auto manufacturer liable for injuries resulting from “defective” wheel and floorboard mounting when driver was struck by another driver who careened out of control).

Figure 15: Enabling Tort



Traditional tort law did not hold Enablers liable. Rather, it usually assigned liability exclusively to the Secondary tortfeasor.³⁵⁵ Oliver Wendell Holmes influenced this traditional rule. In a famed 1894 article,³⁵⁶ Holmes posed an “enabling tort” hypothetical that must strike an eerily prophetic note with a modern crowd: “[W]hy is not a man who sells fire-arms answerable for assaults committed with pistols bought of him, since he must be taken to know the probability that, sooner or later, someone will buy a pistol of him for some unlawful end?”³⁵⁷

Holmes concluded that the gun manufacturer shouldn’t be liable. He then stated a general principle of enabling liability: “The principle seems to be pretty well established, in this country at least, that every one has a right to rely upon his

³⁵⁵ See Rabin, *supra* note 349, at 441 (“Increasingly, th[e] proximate cause limitation, reflecting a compartmentalized view of individual responsibility, has been undermined.”). Criminal law, in contrast, has already shifted to an “enabling model”; often it condemns negligent enabling acts where the Secondary tortfeasor commits a crime. *People v. Kevorkian*, 527 N.W.2d 714, 738 n.70 (Mich. 1994) (“[T]here may be circumstances where one who recklessly or negligently provides the means by which another commits suicide could be found guilty of a lesser offense, such as involuntary manslaughter.”) (emphasis added), *citing* *People v. Duffy*, 595 N.E.2d 814, 816 (N.Y. 1992); *see also* *Persampieri v. Commonwealth*, 175 N.E.2d 387, 389 (Mass. 1961) (convicting husband of manslaughter after taunting drunken and possibly suicidal wife and showing her location of and means to use handgun); *State v. Bier*, 591 P.2d 1115, 1120 (Mont. 1979) (upholding husband’s negligent homicide conviction for placement of gun near drunken wife who committed suicide); *Zinck v. Whelan*, 294 A.2d 727, 730 (N.J. Super. Ct. App. Div. 1972) (“[a] substantial and growing number of jurisdictions, though still a minority, have held, in the ordinary fact case of theft [of car keys] and accident within a reasonable time thereafter that there are at least jury questions as to duty, negligence, and proximate cause [of a negligent car owner].”). *But see* *Mays v. City of E. St. Louis, Ill.*, 123 F.3d 999, 1003, 1004 (7th Cir. 1997) (“[a] person whose negligence just sets the stage for a criminal act generally is not liable for ensuing injury. For example, a person who negligently leaves a car unattended, with the keys in the ignition, is generally not liable to a person injured by a thief driving the car.”); *Wise v. Superior Court*, 272 Cal. Rptr. 222, 226 (Cal. Ct. App. 1990) (finding, in the absence of a special duty, that wife of a sniper who shot plaintiff from his roof is not liable for her failure to warn plaintiff about her husband).

³⁵⁶ Oliver Wendell Holmes, *Privilege, Malice and Intent*, 8 HARV. L. REV. 1 (1894).

³⁵⁷ *Id.* at 10.

fellow-men acting lawfully, and, therefore, is not answerable for himself acting upon the assumption that they will do so, however improbable it may be.”³⁵⁸

Recognizing his rule would provide too much shield from liability for certain Primaries, Holmes allowed that liability could be assessed against a Primary if “he intended to bring about consequences to which that unlawful act was necessary.”³⁵⁹ *Intent* was Holmes’s dividing line for facilitator liability. This means he categorically rejected enabling tort.

Time has not favored Holmes’s dividing line. Ironically, a century after Holmes shunned handgun manufacturer liability, Rabin’s chief example of enabling tort is recent (sometimes successful³⁶⁰) litigation against the handgun industry. The enabling theory is that these corporations share responsibility for handgun deaths and injuries as a result of conscious or negligent oversupply of markets with lax gun laws.³⁶¹

Other recent enabling torts have emerged too: second-hand smoke litigation,³⁶² defective products that the Secondary has negligently manipulated or altered,³⁶³ property owners with inadequate security measures in crime-ridden neighborhoods,³⁶⁴ negligent municipalities or companies whose poor

³⁵⁸ *Id.*

³⁵⁹ *Id.* at 11.

³⁶⁰ *Ileto v. Glock, Inc.*, 349 F.3d 1191, 1204 (9th Cir. 2003) (finding duty under negligent distribution theory); *NAACP v. AcuSport, Inc.*, 271 F. Supp. 2d 435, 491 (E.D.N.Y. 2003) (rejecting liability on other grounds, but acceding that “a duty of care could be imposed on gun manufacturers where there [is] a ‘tangible showing that defendants were a direct link in the causal chain that resulted in plaintiffs’ injuries and . . . defendants were realistically in a position to prevent the wrongs.’”), quoting *Hamilton v. Beretta U.S.A. Corp.*, 750 N.E.2d 1055, 1062 (N.Y. 2001); *Hamilton v. Accu-Tek*, 62 F. Supp. 2d 802, 846 (E.D.N.Y. 1999) (awarding damages under negligent distribution theory); cf. *McCarthy v. Olin Corp.*, 119 F.3d 148, 157 (2d Cir. 1997) (finding bullet manufacturer did not have duty to control distribution of ammunition to protect against gunman’s act in opening fire).

³⁶¹ Rabin, *supra* note 349, at 435–36.

³⁶² See *Broin v. Philip Morris Cos.*, 641 So. 2d 888, 889 (Fla. Dist. Ct. App. 1994) (certifying a class in an action by flight attendants for their alleged second-hand smoke injuries).

³⁶³ As discussed above, although most product liability cases proceed in strict liability, a few Enablers have been held liable for *negligence* in product manufacture. See *Liriano v. Hobart Corp.*, 700 N.E.2d 303, 308 (N.Y. 1998) (requiring duty to warn of foreseeable risks of harm even when there is no design defect liability).

³⁶⁴ *Kline v. 1500 Massachusetts Ave. Apartment Corp.*, 439 F.2d 477, 483 (D.C. Cir. 1970) (finding landlord duty to protect against third-party violence); *Tenney v. Atl. Assocs.*, 594 N.W.2d 11, 21–22 (Iowa 1999) (finding landlord liability for negligently supervising lock changes and key issuance where tenant was raped in apartment); *Cruz v. Middlekauff Lincoln-Mercury, Inc.*, 909 P.2d 1252, 1257 (Utah 1996) (finding that keys left in car where theft was likely means defendant may be proximate cause of harms done by thief while trying to escape police); *Sharon P. v. Arman, Ltd.*, 65 Cal. Rptr. 2d 640, 654 (Cal. Ct. App. 1997) (holding

maintenance of defective roadways or property contributed to injuries caused by negligent drivers,³⁶⁵ vicarious employer liability or *respondeat superior* claims,³⁶⁶ failure of an employer to provide work areas safe from third-party dangers,³⁶⁷ media or publisher "inducement" of negligent or reckless behavior,³⁶⁸

owner of parking complex liable in which plaintiff had been sexually assaulted, despite no prior incidents); *Carlisle v. Ulysses Line Ltd., S.A.*, 475 So. 2d 248, 251 (Fla. Ct. App. 1985) (discussing cruise line failure to warn or protect against masked gunman in port). *But see* *Ann M. v. Pac. Plaza Shopping Ctr.*, 863 P.2d 207, 216 (Cal. 1993) (finding no duty of shopping mall retail store owner to provide security absent previous incidents); *Leslie G. v. Perry & Assocs.*, 50 Cal. Rptr.2d 785, 787 (Cal. Ct. App. 1996) (rejecting landlord liability where only evidence of negligence was expert's testimony that rapist was attracted to and entered the garage because of broken security gate).

³⁶⁵ *Bigbee v. Pac. Tel. & Tel. Co.*, 665 P.2d 947, 953 (Cal. 1983) (finding that whether telephone company is liable when man in phone booth with a faulty door could not escape car veering onto sidewalk is a jury question); *McKenna v. Volkswagenwerk Aktiengesellschaft*, 558 P.2d 1018, 1025 (Haw. 1977) (holding city liable for constructing defective road shoulder where negligent driver caused accident); *Cruz v. City of New York*, 218 A.D.2d 546 (N.Y. App. Div. 1995) (finding construction crew leaving hole in road where negligent driver drove into it, became immobilized, and a second car struck the first, injuring the second driver); *Harvey v. Hansen*, 445 A.2d 1228, 1229 (Pa. Super. Ct. 1982) (finding sign obstruction by bushes facilitating vehicles' collision).

³⁶⁶ *Warner Trucking, Inc. v. Carolina Cas. Ins. Co.*, 686 N.E.2d 102, 105 (Ind. 1997) (stating that employer may still be liable for intoxicated driver's actions, even if driving in violation of company rule); *Foster v. The Loft, Inc.*, 526 N.E.2d 1309, 1311 (Mass. App. Ct. 1988) (holding employer liable for failure to properly screen formerly convicted bartender who punched plaintiff); *McLean v. Kirby Co.*, 490 N.W.2d 229, 244 (N.D. 1992) (holding employer hiring door-to-door salesman without conducting simple and revealing background check liable for salesman's rape of potential buyer); *Christensen v. Swensen*, 874 P.2d 125, 127 (Utah 1994) (setting standards for vicarious employer liability for employee's negligence toward third party during course of employment).

³⁶⁷ *Lillie v. Thompson*, 332 U.S. 459, 461-62 (1947). The court in *Lillie* held railroad company liable for assault upon woman employee and noted that

[p]etitioner alleged in effect that respondent was aware of conditions which created a likelihood that a young woman performing the duties required of petitioner would suffer just such an injury as was in fact inflicted upon her. That the foreseeable danger was from intentional or criminal misconduct is irrelevant; respondent nonetheless had a duty to make reasonable provision against it. Breach of that duty would be negligence, and we cannot say as a matter of law that petitioner's injury did not result at least in part from such negligence.

Id.; *Derdarian v. Felix Contracting Corp.*, 414 N.E.2d 666, 670-71 (N.Y. 1980) (employer who failed to erect adequate traffic barricade liable to plaintiff construction worker struck and injured by negligent driver).

³⁶⁸ *Weirum v. RKO Gen., Inc.*, 539 P.2d 36, 41 (Cal. 1975) (holding disc jockey liable for vehicular death caused by listener's reckless driving, after disc jockey announced that first listeners to drive to his location would win prize); *cf. Rice v. Paladin Enters. Inc.*, 128 F.3d 233,

liability for Enablers where Mother Nature is the intervening cause of harm,³⁶⁹ lawsuits against both tobacco and the fast food industry in which the plaintiffs cast themselves as “remote victims” as a result of the products’ purported addictiveness,³⁷⁰ and perhaps even crime-enabling speech.³⁷¹

252–53 (4th Cir. 1997) (finding that liability attaches where writer *conceded intent* in publishing tutorial on murder that was to assist crime perpetrators); *Olivia N. v. Nat’l Broad. Co.*, 126 Cal. App. 3d 488, 497 (1981). (holding that negligence alone not enough to create liability for television broadcaster’s inducing viewer to commit “copycat” crime).

³⁶⁹ *Gallick v. Baltimore & O. R. Co.*, 372 U.S. 108, 118–19 (1963) (finding jury question of employer’s negligence where employee working near a standing pool of water was bitten by a insect and suffered life-threatening infection); *Bradford v. Universal Constr. Co., Inc.*, 644 So. 2d 864, 865 (Ala. 1994) (finding defendant liable for unsecured plywood sheets that wind blew into plaintiff); *Lanz v. Pearson*, 475 N.W.2d 601, 603 (Iowa 1991) (denying act of God jury instruction because icy and obscured highway conditions could have been “reasonably anticipated”). *But see Memphis & Charleston R.R. Co. v. Reeves*, 77 U.S. (10 Wall.) 176, 189 (1869) (finding no liability for delayed tobacco shipments destruction due to “unexpected” and “sudden and extraordinary” flood); *Rocky Mountain Thrift Stores, Inc. v. Salt Lake City Corp.*, 887 P.2d 848, 852 (Utah 1994) (finding “no duty” to protect against “unforeseeable” flooding). At least one court has noted where a defendant was negligent *and* the inclement conditions were extraordinary and “unforeseeable,” the liability “concurs” and the defendant remains liable for the whole of the harm done. *Lang v. Wonnemberg*, 455 N.W.2d 832, 838 (N.D. 1990). This ruling is equivalent to a joint-and-several liability rule that imposes all financial burden on the Primary where the Secondary is not reachable.

³⁷⁰ For example, class action attorneys have recently targeted the fast food industry in enabling-style lawsuits. *See Pelman v. McDonald’s Corp.*, 237 F. Supp. 2d 512, 538–39 (S.D.N.Y. 2003) (dismissing lawsuit for lack of specificity against McDonald’s restaurants for allegedly contributing to minors’ obesity). The theory for recovery is that these fast food chains have concealed their aim and internal research efforts to improve the taste of its calorie-laden food products to make them more “addicting,” and that these foods, consumed in excess, contribute to the myriad health conditions associated with obesity. *See generally* ERIC SCHLOSSER, *FAST FOOD NATION: THE DARK SIDE OF THE ALL-AMERICAN MEAL* (2d ed. 2002) (describing emergence of “flavor industry” to increase sales of American fast food products). Similar lawsuits against tobacco companies are now familiar. Rabin disputes that these are true enabling torts, inasmuch as the injured third parties are also responsible. Nonetheless, by asserting the “addictiveness” of these products, the plaintiffs are clearly trying to shift liability from themselves to the Enablers to conform their lawsuits to the now-recognized form of enabling tort. *Accord Little v. York County Earned Income Tax Bureau*, 481 A.2d 1194, 1201 (Pa. Super. Ct. 1984) (holding that woman incarcerated for failure to pay income taxes can recover emotional harms damages from negligent tax advisor).

³⁷¹ Eugene Volokh, *Crime-facilitating Speech*, 57 STAN. L. REV. (forthcoming Feb. 2005), available at <http://www1.law.ucla.edu/~volokh/facilitating.pdf> (last visited Oct. 21, 2004).

While these numerous examples confirm enabling tort is becoming popular, many counterexamples persist.³⁷² Such inconsistency must be explained. Rabin contends enabling tort is expanding because courts are reconsidering *who* is better situated to reduce risks of harm. For example, Rabin concludes for crime-ridden property cases:

[n]ot only is the renter in a better position than the tenant to adopt precautionary measures, but the renter is better situated than the police to diminish the risk of criminal assault on the premises—the police, after all, cannot be expected to patrol the interiors of large residential apartment buildings and to exercise vigilance in private spaces.³⁷³

But is this really why Enabler liability is increasing?

Rabin, like Richard Posner before him,³⁷⁴ would place liability on whichever party is best suited to bear it.³⁷⁵ This view equates liability with *capability or suitability to provide social insurance*. However appealing this normative theory may be, it isn't the motivation behind enabling tort's new popularity. Courts assume much more righteous airs, invoking terms such as "fairness" or

³⁷² *Brewer v. Teano*, 47 Cal. Rptr. 2d 348 (Cal. Ct. App. 1995) (denying recovery against deceased's estate for emotional harms stemming from arrest and prosecution where plaintiff's car had been struck by deceased's, but plaintiff fled the scene in apparent fear of the deceased and was arrested on suspicion of felony hit and run); *Poskus v. Lombardo's of Randolph Inc.*, 670 N.E.2d 383, 384 (Mass. 1996) (finding no Enabler liability for negligent valet service when police officer suffered injury arresting car thief who had already abandoned vehicle); *Sheehan v. City of New York*, 354 N.E.2d 832, 835 (N.Y. 1976) (finding no Enabler liability where bus in violation of traffic regulations did not pull over to curb when stopping and was struck from behind by negligently driven garbage truck, injuring bus passenger); *Johnson v. Angretti*, 73 A.2d 666, 668 (Pa. 1950) (finding no liability for bus company where bus had negligently stopped in the road and another driver negligently tried to overtake the bus, but struck and killed oncoming car's driver); *Newton v. South Carolina Pub. Rys. Comm'n*, 462 S.E.2d 266, 267 (S.C. 1995) (finding defendant employed to maintain malfunctioning railroad crossing signal not liable when plaintiff stopped as a result of signal and was struck from behind by negligent driver who failed to halt); *Phan Son Van v. Pena*, 990 S.W.2d 751, 756 (Tex. 1999) (holding storeowner who negligently and illegally sold alcohol to minors not liable for subsequent murder commission).

³⁷³ Rabin, *supra* note 349, at 444. Rabin concedes that an implicit but important motivation behind some enabling torts may simply be an attempt to reach solvent pocketbooks. *Id.*

³⁷⁴ Richard A. Posner, *A Theory of Negligence*, 1 J. LEGAL STUD. 29, 33 (1972) (arguing that responsibility, especially in civil law, should be placed on the person best placed to avoid the loss most cheaply).

³⁷⁵ Rabin suggests a major motivation of enabling tort "is the inability to effectively reach the putative [Secondary] wrongdoer himself, either through criminal or tort sanctions. This is the . . . link to creating responsibility for enabling behavior." Rabin, *supra* note 349, at 444.

“morality” to justify the reachback liability they place on Primaries.³⁷⁶ These are judicial fighting words, not bland cost-benefit musings. In the next section, we will see *why* only some “enabling torts” are being recognized.

For enabling tort to be adjudicated consistently, there must be a metric for *quantifying* the Primary’s and Secondary’s respective risk contributions. Hence we repeat ourselves: without knowing *how much* risk of a future injury an agent contributes, it is an utterly futile proposition to apportion to him any particular amount of blame, or to have confidence that that liability is a “deterrent” commensurate with that actor’s risk contribution. Yet courts universally lack a rigorous risk quantification metric (like EBL and decision analysis).³⁷⁷ Moreover, varied and inconsistent terminology obscures the causal principles behind “enablement.”³⁷⁸ We should hardly be surprised that recent commitment to

³⁷⁶ *Accord Gottshall*, 512 U.S. at 543 (“FELA ‘does not make the employer the insurer of the safety of his employees while they are on duty. The basis of his liability is his negligence, not the fact that injuries occur.’”) (quoting *Ellis v. Union Pacific R. Co.*, 329 U.S. 649, 653 (1947)); *Petition of Kinsman Transit Co.*, 338 F.2d 708, 719 (2d Cir. 1964) (“[T]he discredited notion that only the last wrongful act can be a [liable] cause [is] a notion as faulty in logic as it is wanting in fairness.”); Michael S. Moore, *The Metaphysics of Causal Intervention*, 88 CAL. L. REV. 827, 828 (2000) (“It is morality, not legal policy, that tells us that actions that cause harm are more blameworthy than those that merely attempt or risk such harm.”); *see also supra* note 8.

³⁷⁷ It is evident that courts *desire* some workable risk calculus in enabling tort, just as they desire it in general. Consider, for instance, one federal court’s implicit adoption of a primitive risk assessment for handgun liability:

“Duty” at its essence is a question of policy. While there is a general reluctance to impose liability where harm results in part from the conduct of third-party tortious or criminal conduct . . . a duty of care could be imposed on gun manufacturers where there was a “tangible showing that the defendants were a direct link in the causal chain that resulted in the plaintiffs’ injuries and . . . defendants were realistically in a position to prevent the wrongs.”

A showing of a direct link between the negligence and damage to the public at large ensures that there is no threat of a “specter of limitless liability.” *Important in the determination is that a plaintiff not rely merely on the foreseeability of harm to attempt to hold all members of an industry liable, but rather present “evidence tending to show to what degree the[] risk of injury was enhanced by the presence of negligently [or intentionally harmfully] marketed and distributed guns.”*

NAACP v. AcuSport, Inc., 271 F. Supp. 2d 435, 490–91 (E.D.N.Y. 2003) (internal citations omitted) (emphasis added).

³⁷⁸ Commentators, including courts, have sometimes described Rabin’s “enablement” as “indirect causation.” *Marbled Murrelet v. Pac. Lumber Co.*, 83 F.3d 1060, 1065 (9th Cir. 1996) (referring to habitat alteration as “indirect cause of harm” for interpretation of Endangered Species Act); Erich J. Greene & John M. Darley, *Effects of Necessary, Sufficient, and Indirect Causation on Judgments of Criminal Liability*, 22 LAW & HUM. BEHAV. 429, 439–41 (1998).

enabling torts appears to some as proof that tort law is “out of control” or “arbitrarily” decided. We must satisfactorily explain *in which circumstances* enabling tort is being permitted to prevent this appearance of arbitrariness. Further, we want to know what this recent extension of enabling liability will mean for fear claims.

D. Traditional, Enabling, and Leapfrogging Liability

The usual test for dividing liability among joint tortfeasors asks whether a Secondary is a *superseding cause*.³⁷⁹ In traditional torts, a superseding cause exists and only the Secondary is liable. In enabling tort, no superseding cause exists and both Enabler and Secondary are liable. The existence of a superseding cause usually turns on “reasonable foreseeability.”³⁸⁰ We already have seen the

Others have indicated that language patterns may be to blame for proper understanding of enabling causality. For example, one pair of authors has shown psychological differences prompt some to write statements such as “the plant bloomed” and others to write “the gardener caused the plant to bloom.” The authors contend that the linguistic similarity of these statements encourages judges to bypass causality issues without critically considering causal differences in these statements. Lawrence M. Solan & John M. Darley, *Causation, Contribution, and Legal Liability: An Empirical Study*, 64 LAW & CONTEMP. PROBS. 265, 279 (2001).

³⁷⁹ Dobbs attempts to explain superseding cause’s motivation, but like others before him, see, e.g., ROBERT E. KEETON, LEGAL CAUSE IN THE LAW OF TORTS (1963); Glanville Williams, *The Risk Principle*, 77 LAW QUARTERLY REV. 179, 180–81 (1961); Warren A. Seavey, *Mr. Justice Cardozo and the Law of Torts*, 52 HARV. L. REV. 372, 374–76 (1939), is linguistically hampered by a lack of firm definitions for negligence and proximate risk:

A ruling that an intervening actor is a superseding cause embodies the dual conclusion that the intervening actor should be responsible, and that the original actor, in spite of his causal negligence, should not. . . . [I]n contemporary law, when courts then ask what counts as a superseding cause, . . . [t]he rule is that if the intervening cause itself is part of the risk negligently created by the defendant, or if it is reasonably foreseeable at the time of the defendant’s negligent conduct, then it is not a superseding cause at all. In that case, the defendant is not relieved of liability merely because some other person or force triggered the injury.

DOBBS, *supra* note 162, § 186, at 462 (citing RESTATEMENT (SECOND) OF TORTS §§ 442A & 442B).

³⁸⁰ *Duphily v. Delaware Elec. Coop., Inc.*, 662 A.2d 821, 829 (Del. 1995). The court in *Duphily* noted:

If the intervening negligence of a third party was reasonably foreseeable, the original tortfeasor is liable for his negligence because the causal connection between the original tortuous act and the resulting injury remains unbroken. If, however, the intervening negligence was not reasonably foreseeable, the intervening act supersedes and becomes the *sole* proximate cause of the plaintiff’s injuries, thus relieving the original tortfeasor of liability.

problems with “foreseeability”; to be consistent in allocating liability, we need a better definition of superseding cause.

Two fact patterns can clarify what “superseding cause” is getting at. Construction employee *A* is working on a busy public highway near traffic. Employer *B*, without statutory obligation to do so,³⁸¹ erects a barricade to protect *A* and others. An automobile veers out of control and crashes through the barricade. Evidence indicates that a stronger barricade could have slowed, perhaps stopped, the careening car. *A* is injured by the car. *B* is probably liable to *A*.³⁸²

Now imagine a permutation: an airplane crashes on the highway, slides down the road and through the barricade. It causes exactly the same injuries to *A* as the car collision would have. There are barricades that can shield against sliding airplanes, but they are quite expensive. *B* is probably not liable to *A*.³⁸³

We have an intuitive understanding of the difference in these liability results: an airplane strike seems “extraordinary,” a car collision seems “normal.” Our intuition, while correct, masks that there are *two* pertinent differences. First, the likelihood of being struck by an airplane while working on an urban street is orders of magnitude lower than the likelihood of being struck by a car.³⁸⁴ Thus, airplane strikes are less likely to amount to a “significant” risk than vehicular collisions. The second difference is a cost-benefit consideration; the airplane barricade is much more expensive than a vehicular barricade. Even if the risks of an airplane strike and a vehicular strike were *equally* likely, the marginal risk reduction benefit from investment in a vehicular barricade would be greater than

Id. (citations omitted).

³⁸¹ The issue of inferring negligence or proximate risk from statutory non-compliance complicates risk analysis, and thus, liability analysis. Statutes can be generated by politics or other factors, rather than pure risk analysis. If a statute is divorced from optimal risk-based policy, non-compliance *does not* mean a person is negligent, yet the legal presumption usually given to non-compliance is that the person *is* negligent. Cass Sunstein has recently championed the evident way to solve this deadlock: create administrative and legislative policies that are rooted in epistemic risk analysis, not politics. CASS SUNSTEIN, *RISK AND REASON: SAFETY, LAW, AND THE ENVIRONMENT* (2002). If Sunstein’s vision were achieved, illegality would become a better proxy of negligence or proximate risk.

³⁸² See *Derdarian v. Felix Contracting Corp.*, 414 N.E.2d 666, 671 (N.Y. 1980) (finding liability for this fact pattern). We are assuming that the cause of action is negligence, not workman’s compensation.

³⁸³ *Accord Doss v. Town of Big Stone Gap*, 134 S.E. 563, 565 (Va. 1926) (finding no liability for alleged negligence of city in forcing vehicular detour around impassable road where decedent was struck and killed by an airplane while on detour).

³⁸⁴ Kimberly M. Thompson et al., *The Risk of Grounding Fatalities from Unintentional Airplane Crashes*, 21 RISK ANALYSIS 1025, 1036 (2001) (estimating the total lifetime risk of a grounding’s being killed by an airplane to be approximately nine in ten million persons, but with the risk “rapidly declining” outside the first two miles around an airport).

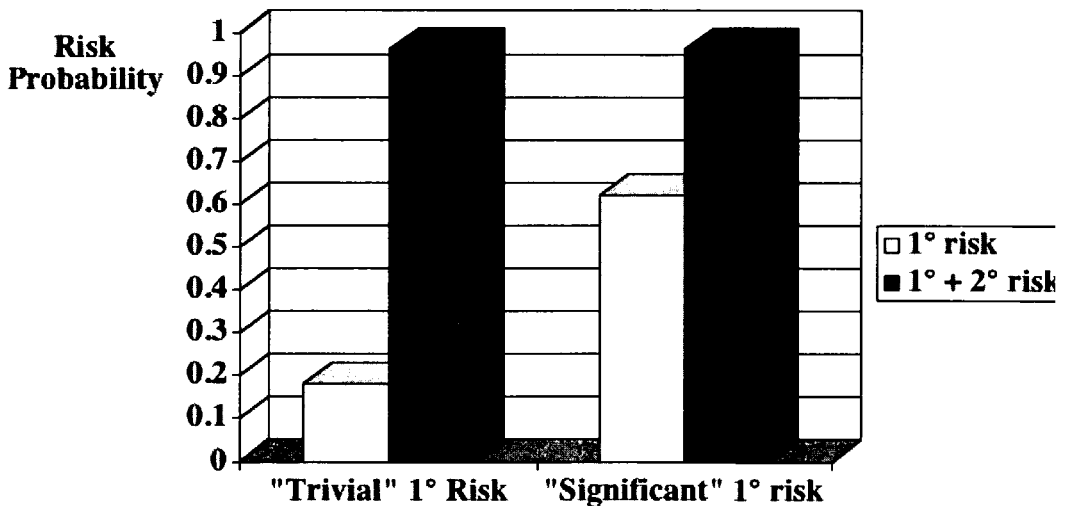
from investment in airplane barricades. In a world with finite monetary resources, we should invest our risk-reducing dollars in the most efficient manner possible.

These examples make evident that "reasonable foreseeability" (the fulcrum on which superseding cause currently rests) should be replaced by our definition proximate risk (based on a concept of prioritizing resources to address the most social costly and prevalent risks first). We accordingly reword the superseding cause test:

If relevant duty exists and if a tortfeasor creates proximate risk, there is no superseding cause for that tortfeasor.

A Secondary's acts may (1) cause *new, additional* epistemic risks; or (2) amplify *existing* risks. If a Secondary creates a *new* risk, a Primary obviously shares no liability. But if a Secondary *amplifies* a risk to which the Primary also contributed, multiparty liability allocation is not as simple. One must then ask: what would the epistemic risk have been *in the absence* of the Secondary's behavior? Would the Primary's risk have been "significant" *on its own*? To see this concept better, consider the following diagram (assume the "significant" risk threshold is 0.3):

Figure 16: Risk "Significance": A Requirement for Individual Liability



To set liability for jointly caused risks, it is essential to quantitatively determine whether that *fraction* of the total risk attributable to a Primary is a proximate risk *on its own*. Even if the Primary's risk contribution is "significant," his actions may be economically justified and therefore still not create a

proximate risk.³⁸⁵ But if not, the judge will conclude that a reasonable jury could find the Primary to have created a proximate risk.³⁸⁶

To assess a *Secondary's* liability for amplifying an *existing* epistemic risk, the same method applies: first we subtract the Primary's risk contribution from the total risk. If the remaining risk fraction attributable to the Secondary is "significant"—and observe that nothing requires the "significant risk" cut-off be the same for a Secondary and a Primary³⁸⁷—we conclude the Secondary has contributed an *independent* proximate risk if his act is unexcused by decision analysis or duty.³⁸⁸

Up to now, we have discussed two ways liability is allocated among multiple tortfeasors: traditional and enabling tort. There is a *third* form of liability allocation, which we call "*leapfrogging tort*." Leapfrogging tort, like enabling tort or traditional tort, involves a Secondary who (1) creates a new (additional) proximate risk;³⁸⁹ or (2) amplifies an *existing* epistemic risk of the Primary's. An example: Negligent driver *A* creates epistemic risks of injurious collision with each of two pedestrians, *B* and *C*. To escape injury, *B* dives out of the car's path. *A* swerves and grazes *C*. Simultaneously, *B's* dive knocks *C* down, breaking *C's*

³⁸⁵ See *supra* Part IV.B.2.

³⁸⁶ Even this does not mean Primary liability follows automatically. Procedurally, a judge who undertakes these steps is determining *duty*, not proximate risk. A policy consideration, unrelated to negligence or proximate risk, could still militate against finding a duty. But if there is no such policy concern, the case goes to a jury, which will (re)deliberate the issues of negligence and proximate risk to set liability. (Note that even after being released to a jury, cases naturally can be dismissed on other grounds such as failure to demonstrate actual causality or injury, or for procedural or jurisdictional reasons.)

³⁸⁷ Indeed, we make the case below that the "significance" floor for risk communicators in fear lawsuits should generally be lower than for their physical injurer counterparts. See *infra* Part IV.E.

³⁸⁸ Note that *every* element of proximate risk must be met, *independent of others' risk contributions*, for a Secondary to be liable. There is a temptation, for instance, to erroneously place liability on the Secondary if his amplification of extant risk causes the *total* risk—not his individual contribution to that total—to be significant. Further, a Secondary may amplify extant risk—perhaps even "significantly"—but has still not created a proximate risk if decision analysis exonerates his act. In such an instance, liability for the Secondary's "significant" but economically justifiable risk increase could be assigned jointly and severally to those tortfeasors who *did* create a proximate risk of that injury.

³⁸⁹ This includes the class of "rescue" cases—in which a person who aids the victim of a negligent tortfeasor is himself injured in the rescue attempt. In the rescue cases, the rescuer has created a *novel* risk of harm—injury to himself—rather than *amplifying* the extent or likelihood of injuries to the original victim. See *Thomas v. Garner*, 672 N.E.2d 52, 57 (Ill. App. Ct. 1996); *Solomon v. Shuell*, 457 N.W.2d 669, 682–84 (Mich. 1990); *Wagner v. Int'l Ry.*, 133 N.E. 437, 438 (N.Y. 1921).

arm. This broken arm would not have occurred if *A* alone had impacted *C*. *C* can recover against *A*, but not *B*, for his broken arm.³⁹⁰

The conceptual premise of leapfrogging tort is subtle to catch, particularly because it is unintuitive that the last contributing agent in a causal chain leading to undisputed harm assumes no liability. Yet this is exactly what sometimes happens. The implication of leapfrogging tort is that *all* liability bypasses the Secondary actor, and accrues entirely to Enablers upstream (in the two-person model, to the Primary). If those Enablers also did not *individually* create proximate risks, there simply is no liability.

After restating tort doctrine in conformance with basic risk principles, we are finally in a position to correct Rabin's oversight about *why* enabling tort is coming into vogue. Enabling tort *always* should have been recognized under the time-honored maxim that negligence, proximate risk, scientific cause and injury establish liability. The long-running failure to do so consistently is attributable to misconceptions about risk. How could courts expect to correctly identify *multiple* proximate risks resulting in a single harm, as in enabling tort, when judges have enough trouble identifying *single* proximate risks? Undoubtedly similar misapprehensions are why leapfrogging tort has not even been named before. But now we see that, like all of Gaul, negligence-based liability is divided into three parts:³⁹¹

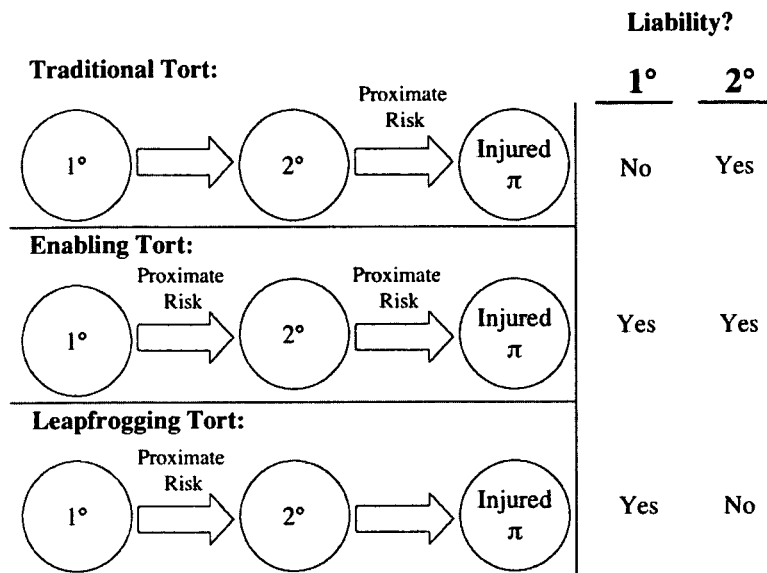
³⁹⁰ See RESTATEMENT (SECOND) OF TORTS § 445 cmt. c, illust. 3 (1965) (describing leapfrogging tort by example:

A negligently drives his car so as to endanger B in the street. To escape being hit B leaps out of the way. In doing so he knocks down C, who was not in the path of the car. A's liability to C will depend upon whether he should have realized when driving that such a person in the vicinity of B might be injured by his negligent driving.

Id.

³⁹¹ We have been working with the simplest form of enabling tort: cases with two alleged tortfeasors. But the principles are generalizable. If there are *N* accused tortfeasors, liability should accrue to however many of the tortfeasors have created independent proximate risks. To do this in practice, one should calculate the total epistemic risk, and then determine each of the *N* actors' potential proximate risk creations by beginning farthest *upstream* in the causal chain. Each layer of risk augmentation or additional risk creation, regardless of whether it amounts to a proximate risk, should be subtracted from the total epistemic risk magnitude or number of risks, until the last tortfeasor (by definition, the only non-Enabler) is reached. Presumably, if there are numerous risk communicators who each created a proximate risk for fear-related harms, they are jointly-and-severally liable, along with any proximately negligent physical injurers, for that fear. To the extent that a state does not recognize joint-and-several liability, other liability apportioning mechanisms may have to be introduced, such as market share liability. See *Hamilton v. Accu-Tek*, 62 F. Supp. 2d 802, 845 (E.D.N.Y. 1999) (imposing collective liability for sellers of .25 caliber handguns who negligently marketed handguns, such that they were too likely to be used illegally and criminally by teenagers); *Hymowitz v. Eli Lilly & Co.*, 539 N.E.2d 1069, 1071-72 (N.Y. 1989) (adopting market share approach in DES

Figure 17: Modes of Liability



E. Allocating Fear Liability

“We have come to fear the word as much as the sword.”

– Eric Hoffer³⁹²

Fear lawsuits usually involve only a physical injurer (e.g., an asbestos manufacturer, physician, or criminal) and a fearful plaintiff. But being at risk of *physical harm* is alone insufficient to result in fear, *regardless* of how “significant” courts may consider that very same risk to be in physical injury claims. Our fears these days stem mostly from having been “taught” through risk communication to perceive risk. And coaching a perception of risk that is *in excess* of true risks creates *excessive* fear. To prevent fear, imperfect risk communication must be deterred.

Where fear is caused by risk communication, and creation of the physical risk precedes the communication, the physical injurer is not a Secondary, but a

cases); *Collins v. Eli Lilly & Co.*, 342 N.W.2d 37, 53 (Wis. 1984) (liability in proportion to risk imposed, with market share relevant to determining that risk proportion). *But see* *Smith v. Eli Lilly & Co.*, 560 N.E.2d 324, 344 (Ill. 1990) (rejecting market share approach to collective liability for DES production).

³⁹² ERIC HOFFER, *THE TRUE BELIEVER: THOUGHTS ON THE NATURE OF MASS MOVEMENTS* 105 (1951).

Primary (Enabler).³⁹³ The *risk communicator* is the *Secondary*. Yet risk communicators currently do not suffer liability for their errant communications. If a risk communicator himself has created an *independent* proximate risk of the same fear, he too should be liable. And if the physical injurer has not created a risk of *fear* that amounts to proximate risk, he might otherwise be liable for the physical risk he has posed, but *not* for fear.

Currently law does not reflect these principles. The media and other risk communicators almost *never* are punished for unwarranted fear resulting from the *content* of their reports.³⁹⁴ Rather, successful claims against communicators condemn only certain *newsgathering means*, such as trespass, privacy invasion, etc.³⁹⁵ Yet the emotional effect of communicated content is usually the more vexing social harm.

By applications of our carefully developed definitions and axioms from Part IV.A, we can derive rules for when a physical injurer should be exclusively liable for fear, when a risk communicator should be exclusively liable, and when liability should be shared, as in an enabling tort.³⁹⁶ For simplicity, issues of the

³⁹³ We make the simplifying assumption that risk communication commences *after* the physical risk has arisen. This does not have to be the case; often, risk communication sensitizes a person to risk *before* actual impact, exposure, or the witnessing of another's injury. The method for assessing liability that we have laid out can easily accommodate this temporal reversal in the chain of fear causation: simply reverse the roles of the risk communicator (who becomes the *Primary*) and the physical injurer (who becomes the *Secondary*). Then, to determine whether the tort fits the traditional, enabling, or leapfrogging tort liability model, we would still assess whether each party has contributed independent proximate risk(s) of the harm(s).

³⁹⁴ Cf. *Cowras v. Hard Copy*, 56 F. Supp. 2d 207, 211 (D. Conn. 1999) (holding media defendants liable under NIED claim because they "made no attempt to ascertain the truth for fear of killing what they believed was a 'great story'").

³⁹⁵ See Karen Markin, *The Truth Hurts: Intentional Infliction of Emotional Distress as a Cause of Action Against the Media*, 5 COMM. L. & POL'Y 469, 488–91 (2000) (noting that many courts award IIED damages for specific newsgathering activities, but that few recognize content-based IIED harms by the media).

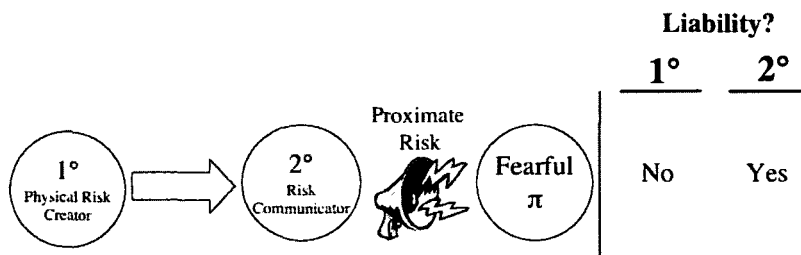
³⁹⁶ Note that in this section we are merely determining when liability *exists* for both tortfeasors. We are not considering the *proportional allocation* of liability, where an enabling tort exists. In states where joint-and-several liability exists, each liable party is responsible for the fear damages in their entirety, with a right of proportionate recuperation from other liable tortfeasors. *Accord* *McDermott, Inc. v. AmClyde*, 511 U.S. 202, 220–21 (1994). The court in *McDermott* noted that:

[T]here is no tension between joint and several liability and a proportionate share approach to settlements. Joint and several liability applies when there has been a judgment against multiple defendants. It can result in one defendant's paying more than its apportioned share of liability when the plaintiff's recovery from other defendants is limited by factors beyond the plaintiff's control, such as a defendant's insolvency. When the limitations on

plaintiff's comparative or contributory negligence are assumed *not* to exist, although most courts will likely continue to recognize them where appropriate.³⁹⁷ Furthermore, we assume there is no issue of the defendant's "duty" *unrelated* to negligence considerations.³⁹⁸

1. "Traditional"-Style Fear Liability

Figure 18: Traditional Tort for Communications-Induced Fears



a. *Where a Physical Injury Has Created Only a Nomological Possibility of Physical Harm.*

Where a physical injurer's actions pose only a nomological possibility of physical harm (i.e., a *hypothesized* "risk"), he cannot be held liable for it.³⁹⁹

the plaintiff's recovery arise from outside forces, joint and several liability makes the other defendants, rather than an innocent plaintiff, responsible for the shortfall.

Id.; see also discussion *supra* note 391.

³⁹⁷ See, e.g., *State v. Eaton*, 710 P.2d 1370, 1377 (Nev. 1985). The court in *Eaton* noted that:

In the context of bystander recovery, if the victim's negligence exceeds that of the defendant, then the victim cannot recover for his or her injuries and neither can the witness recover for the emotional distress caused by observing those injuries. . . . [t]hus, the principles of comparative negligence operate to limit liability in bystander cases just as they do in other types of cases.

Id. (citing *Dillon v. Legg*, 441 P.2d 912 (Cal. 1968)).

³⁹⁸ See discussion *supra* note 295.

³⁹⁹ Readers might protest that even if the potential for physical harm is only a nomological possibility, there is still an epistemic risk of fear caused by that Primary's acts in an already sensitized social culture. This is a blatant case of *reductio ad absurdum*—if that were true, *no one* could *ever* act because all acts can be associated with nomological possibilities of physical harm. Even if we accepted this dubious counterargument, decision analysis—the second requirement of proximate risk—would most certainly exonerate a Primary's ability to act in physically non-risky manners, relative to the limited (if not non-

Nomologically, possible physical harm is not a basis of proximate risk for fear.⁴⁰⁰ Or if EBL at one time indicates the acts of the physical injurer have created an epistemic risk, but later the best evidence indicates that "risk" was only

existent) risk of causing fear. *Cf.* Williamson v. Waldman, 696 A.2d 14, 21 (N.J. 1997) The Court in *Williamson* noted that

in determining legal responsibility for emotional injury attributable to the fear of contracting AIDS[,] . . . persistence of ignorance about AIDS . . . dominates the reasoning of . . . many courts Therefore, *as a matter of sound public policy, the standard of proximate cause should require as an element of the test of causation a level of knowledge of the etiology and risks of AIDS that can serve to overcome and effectively discourage the kind of ignorance that nourishes the hysteria and irrational fear of contracting AIDS, which, in turn, perpetuate the prejudice and discrimination that surround the AIDS epidemic.* . . . [T]he reasonableness standard *should be enhanced* by the imputation to a victim of emotional distress based on the fear of contracting AIDS of that *level of knowledge of the disease that is then-current, accurate, and generally available to the public.*

Id. (emphasis added).

⁴⁰⁰ See discussion *supra* note 379. *Accord* Akins v. Sacramento Mun. Util. Dist., 18 Cal. App. 4th 208, 246–47 (1992), *depublished at* No. S027664, 1994 Cal. LEXIS 1593 (Cal. March 30, 1994):

[Plaintiffs] base their claim of emotional distress upon fear of excessive exposure to radioactivity, but that fear was based [exclusively] upon media and other secondhand reports *which proved to be unfounded*. Not only were the media reports unfounded, they were contrary to the affirmative assurances of both [defendants] that there was no cause for alarm. In these circumstances plaintiffs have not pointed to evidence of a 'well-founded substantial certainty' that they were subjected to excessive exposure; instead they are seeking to recover damages based upon a generalized concern arising out of unfounded secondhand reports. Such a showing will not support a cause of action for the negligent infliction of emotional distress [against a physical injurer].

Id. (emphasis added); *see also* Glick v. Henderson, 855 F.2d 536, 539 (8th Cir. 1988). The court in *Glick* stated:

[T]he risk appellant alleges is based on unsubstantiated fears and ignorance. The basis of his complaint are the allegations that appellant faces a pervasive risk of acquiring AIDS because: (1) he comes into contact with the sweat of other inmates during work detail; (2) he is subject to bites from mosquitoes which have bitten other inmates; (3) he has been sneezed on by a known homosexual; (4) [prison] officials untested for AIDS prepare his food; and (5) the [prison] regularly transfers prisoners from cell to cell throughout the prison. The possibility of the transference of AIDS through these means is simply too remote to provide the proper basis for appellant's complaint as it is currently framed.

Id.

hypothetical, he cannot be liable for fears arising or continuing *after* the date on which the “risk” reverted.⁴⁰¹

A risk communicator does not get off so easily when he broadcasts conjectured “risks.” When he speaks, a risk communicator sows a risk of fear—it does not matter whether the physical “risk” reported is actually epistemic. If the risk of fear the communicator poses is also “significant” (Robert Nozick’s fear floor) and economically inexcusable (as estimated by decision analysis), he will be liable for that unnecessary fear.

What level of fear risk is “significant”? Remember from Part IV.B.1 that it is philosophically and practically difficult to set a particular floor for “significant” risks of fear, either in the aggregate or for a particular defendant.⁴⁰² Fear liability for risk communicators is an exception to this general rule. *For baseless or skewed risk communication*, a sensible fear floor might simply be that *any* communications-induced risk perception in excess of the true epistemic risk of physical harm is “significant.” Making *all* baseless or skewed fear compensable would obviously satisfy natural rights thinkers. Utilitarians too would acknowledge that because skewed communication has no direct benefits, the economic justifications for any other “significance” level of fear risk besides zero are weak.⁴⁰³

Courts could disagree with this strict “significance” standard for risk communicators, saying some forgiveness (a “fudge” zone) must be built in. This argument that deterrence of truthful communication can occur by penalizing false or misleading communication is plausible.⁴⁰⁴ We do not wish to advance too far in this debate here, but we will repeat some observations we made in Section IV.B.1. There might be merit to allowing risk communicators with *smaller* “reach” (i.e., audience size) more leeway to make mistakes because they affect fewer listeners. Furthermore, risk communicators without a large audience are less likely to have the time, resources, or training to undertake EBL analysis before representing hypothesized “risks” as objectively verified (epistemic) risks.

⁴⁰¹ “Vanishing” risk means a “risk” creator may at one point be liable, later not, and later potentially liable again, until the statute of limitations runs. This is acceptable—but note that there can be no fear liability accruing to the physical injurer during the periods when a “risk” is only a nomological possibility according to EBL.

⁴⁰² See *supra* Part IV.B.1.

⁴⁰³ Recall that skewed risk perception not only increases fear, but also can lead to improper resource allocation to combat perceived risks. Sometimes this can lead to *increases* in the risk of physical harm. See *supra* notes 345–48 and accompanying text.

⁴⁰⁴ Unlike notoriously vague and imprecise adjectives such as “misleading,” however, EBL and risk quantification afford significantly improved accuracy in delineating pure nomological possibilities and true risks. Thus, the general free speech advocate’s worry that penalizing false speech is harmful to truthful speech is not as pressing in the context of errant risk communication when EBL is invoked.

As a practical matter, these limitations make failure by “reach-less” risk communicators more unavoidable. Conversely, a “significant” risk of unwarranted fear will be closer to zero for the mass media, which has large “reach.”

Finally, observe it makes no sense to conduct cost-benefit analysis of skewed or baseless risk perception that a risk communicator has caused.⁴⁰⁵ This is because “excess” risk information (anything beyond the amount required to establish accurate risk perception) has no benefits, only harms. *A risk communicator who has independently created a “significant” risk of fear cannot be saved from liability by decision analysis.*

b. Epistemic Physical Risks That Do Not Amount to Proximate Risks for Fear

If a physical injurer’s risk of physical harm does not translate to a risk of fear that is “significant,” or is exempted from liability by decision analysis, or both, it does not amount to a proximate risk for fear and the injurer will not be liable.

If the risk communicator achieves a risk perception commensurate with the actual risk of physical harm, again, we believe he should not be liable.⁴⁰⁶ But for any “significant” skew beyond that appropriate risk perception, the risk communicator is liable. (Recall again that “significance” for risk communicators—particularly mass media—may be close to zero. This means that a mass risk communicator is potentially liable for *any* skew he creates).

An interesting special case occurs when the physical injurer is *also* the risk communicator. Here, the same tortfeasor has assumed *two* roles. The analysis should proceed just as it normally would, but if proximate risk of fear is found for *either* the physical risk creation *or* the risk communication, the defendant is liable.

Judges have completely misunderstood this special case. Indeed, one California Supreme Court decision, *Molien v. Kaiser Foundation Hospitals*,⁴⁰⁷ has caused conniptions for that court and others who struggle to rectify its outcome with their scientifically baseless tests of bystander liability. In *Molien*, a woman falsely tested positive for syphilis. The false positive was attributable to physician error. Beyond informing the woman of her (false) positive test result, the

[d]efendants knew plaintiff husband would learn of the diagnosis, as they instructed Mrs. Molien to so advise him. Thereafter plaintiff was required to undergo blood tests himself in order to ascertain whether he had contracted

⁴⁰⁵ See *supra* Part IV.B.2.

⁴⁰⁶ See *supra* Part II.D.

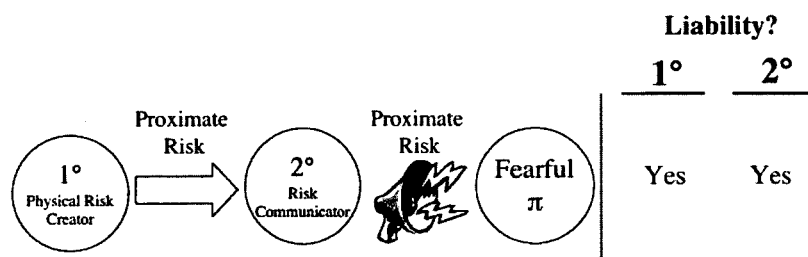
⁴⁰⁷ 616 P.2d 813 (Cal. 1980).

syphilis and was the source of his wife's purported infection. The tests revealed he did not have the disease.⁴⁰⁸

Had the California Supreme Court properly understood that the doctors acted as both physical injurers (conducting a negligent test) *and* risk communicators (instructing the woman to tell her husband of his syphilis "risk"), its amusing subsequent attempts to minimize *Molien*, which awarded the husband damages for his fear of syphilis, would have been unnecessary.⁴⁰⁹

2. Enabling Fear Liability

Figure 19: Enabling Tort for Communications-Induced Fears



⁴⁰⁸ *Id.* at 814.

⁴⁰⁹ See *Huggins v. Longs Drug Stores California, Inc.*, 862 P.2d 148, 151–52 (Cal. 1993). In *Huggins* the court noted that:

The “direct victim” label stems from *Molien*. . . . There, “we found that a hospital and a doctor owed a duty directly to the husband of a patient, who had been diagnosed incorrectly by the doctor as having syphilis and had been told to so advise her husband in order that he could receive testing and, if necessary, treatment. . . . We reasoned that the risk of harm to the husband was reasonably foreseeable and that the ‘alleged tortious conduct of the defendant was directed to him as well as to his wife’. . . . Under such circumstances we deemed the husband to be a ‘direct victim’ and found the criteria for bystander recovery not to be controlling.”

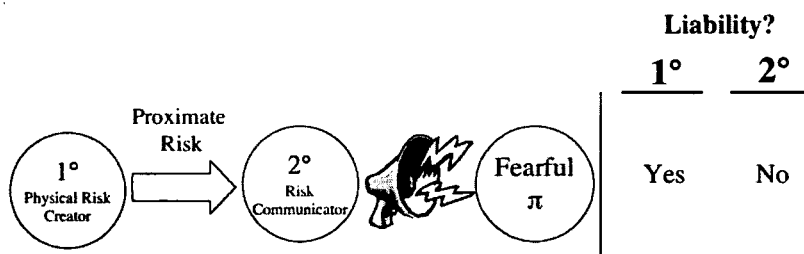
Since *Molien* was decided, we have made clear that despite its broad references to foreseeability, the opinion should be read as basing the defendant doctor’s direct-victim liability only upon his assumption of a direct duty toward the husband. That duty did not arise simply because the doctor’s misdiagnosis “necessarily involved him directly”. . . but because the doctor directed his patient, the wife, to advise the plaintiff husband of the diagnosis.

Id. (internal citations omitted); *Thing*, 771 P.2d at 824 (“*Ochoa v. Superior Court* . . . partially explained and limited ‘direct victim’ recovery under *Molien* . . . to situations in which the defendant’s negligence is ‘by its very nature directed at’ the plaintiff.”).

We have studied enabling tort at length: the physical injurer and the risk communicator have *each* caused through their respective actions or communications an *independent* proximate risk of fear. Remember, to assess the *fear* liability of physical injurers who place others at *physical* risk, it is necessary to assume that physically at-risk individuals accurately perceive—and fear—that physical risk, as if risk communication was always instantaneous and accurate.⁴¹⁰ (The flip-side of this assumption means that when the physical “risk” a person faces is only nomologically possible and accurately communicated, a person should be unafraid and the physical injurer exonerated, as in the traditional liability model discussed directly above.⁴¹¹) In assessing proximate risk for risk communicators, decision analysis again is inapplicable to skewed risk communication.

3. Leapfrogging Fear Liability

Figure 20: Leapfrogging Liability for Communications-Induced Fears



This final liability form is currently used (often improperly) for *all* fear cases. We advocate a bright line rule permitting a risk communicator always and everywhere to communicate EBL-justified epistemic risks and nomological possibilities, so long as his communication does not skew his audience’s risk perceptions. Liability attaches for the physical injurer if he is proximately negligent for fear, under the same assumptions discussed immediately above for enabling liability.

F. The Problem of Fear Amplification

The concept of fear amplification—that risk communication offers an inherent trade-off between the benefits of risk knowledge and the harms of

⁴¹⁰ Courts already implicitly make this assumption by the very fact that they *do* assign fear liability to physical injurers.

⁴¹¹ Remember: nomological possibilities do not pose a physical *risk*. See discussion *supra* note 399 and accompanying text (discussing that “nomological possibility creators” are not liable for fear).

fear⁴¹²—implies that even *properly* functioning risk communication about just one risky act can spawn countless genuine fears. One nuclear catastrophe terrorizes thousands of physically at-risk people, for instance.⁴¹³ If blanket fear liability was assigned after such a calamity, the physical injurer could be bankrupted.

Should bankruptcy be the only limit to a proximately negligent physical injurer's fear liability? Robert Nozick contends there is a fundamental philosophical difference between non-compensation due to inability to pay, and a state's refusal to acknowledge that in an ideal world with unlimited resources, compensation would be compelled.⁴¹⁴ If Nozick's intuition—which arises from political philosophy, not cost-benefit analysis—is correct, it may sometimes be acceptable to exempt a proximately negligent, but financially strapped defendant from a fear claim *without* resorting to bankruptcy.⁴¹⁵ A way of rationally limiting

⁴¹² See *supra* Part IV.B.2.

⁴¹³ *Accord* Kuehn v. Children's Hosp., 119 F.3d 1296, 1298–99 (7th Cir. 1998) (applying Wisconsin law). The Kuehn court noted:

Tens of millions of Americans were shocked by the assassination of President Kennedy; should they have been allowed to join in a class action against the FBI, the CIA, and the Secret Service for negligence in failing to anticipate and neutralize the threat that Lee Harvey Oswald posed to the President?

Id. Obviously where risk communication functions *improperly* (i.e., informs those who are not at-risk that they are, or exaggerates the character of the risk for those at risk), fear amplification is even more of a problem.

⁴¹⁴ Nozick writes:

Forbidding an action to those not in a position to pay compensation differs from forbidding it unless compensation is paid to those actually harmed . . . in that in the former case (but not in the latter) someone who lacks provision for paying compensation may be punished for his action even though it does not actually harm anyone or cross a [significance] boundary.

Does someone violate another's rights by performing an action without sufficient means or liability insurance to cover its risks? May he be forbidden to do this or punished for doing it? Since an enormous number of actions do increase risk to others, a society which prohibited such uncovered actions would ill fit a picture of a free society as one embodying a presumption in favor of liberty, under which people permissibly could perform actions so long as they didn't harm others in specified ways.

ROBERT NOZICK, ANARCHY, STATE, AND UTOPIA 78 (1974). (Nozick is wrong to say that an act might increase risk without harming others, because risk information always carries a risk of fear, but his general libertarian argument still has credence.).

⁴¹⁵ Per our definition, a court would state that the defendant has no "duty" to avoid this particularly broad extent of harm. See *supra* Part IV.A.

fear amplification is to award damages first to those fears that are the most clinically "serious." For example, a phobia of dogs that results in an inability to walk around the block alone is usually less clinically worrisome than a combat veteran's untreated post-traumatic stress syndrome.⁴¹⁶ We suggest that in place of *Ayers*'s two-part "genuine and serious" test of fear, courts adopt a standard that limits fear liability for physical injurers on *three* bases: (1) "genuine," (non-fraudulent); (2) "significant" (a physical risk that creates unacceptable risks of fear); and (3) "clinical" (fear and derivative emotional harms that are more likely to demand considerable medical and professional attention).⁴¹⁷

V. CONCLUSION

Americans are more afraid of life than they were twenty years ago, even though they can now expect to live longer and more safely.⁴¹⁸ We must correct this imbalance. We must prevent nomological possibilities from being perceived as "risks." We must understand which epistemic risks impact which of us, and which do not. It is time to reconsider risk and fear.

Most courts have overlooked that risk communication nowadays is usually an essential step in creating fear. Instead, courts allow significant fear liability to twist and contort itself through a scientifically baseless labyrinth of judicial tests, ultimately to attach to an actor who may (or may not) have created an epistemic risk of physical harm. Unjustified fear will dissipate if risk communicators are held to bear for their reporting. Unjustified fear checked by the present liability structure will only grow, making latter-day Chicken Littles of us all. We must retake control of our public domain of risk knowledge.

Justice Stephen Breyer, for one, does not believe this improved risk communication can happen. He cites two reasons: "disagreement among experts [about the nature of risks], and the fact that most members of the public made up

⁴¹⁶ *Accord* *Paugh v. Hanks*, 451 N.E.2d 759, 765 (Ohio 1983). The court in *Paugh* stated that

[b]y the term "serious," we of course go beyond trifling mental disturbance, mere upset or hurt feelings. We believe that serious emotional distress describes emotional injury which is both severe and debilitating. Thus, serious emotional distress may be found where a reasonable person, normally constituted, would be unable to cope adequately with the mental distress engendered by the circumstances of the case.

Id.

⁴¹⁷ Identifying which fears are "clinical," and which are not, is a question for EBL-informed psychiatrists and psychologists and not part of this article.

⁴¹⁸ *See supra* Part III.D.

their minds [on a subject] long ago.”⁴¹⁹ Evidence-based logic (EBL), the recently born method for objectively determining epistemic risks, answers his first objection. And even if Justice Breyer is right that extinguishing fears is a costly and time-consuming proposition,⁴²⁰ we can at least stop more from being created. It is better to fight an angry 800-pound gorilla than to feed it more bananas first.⁴²¹

This article marks what may become an extended, controversial discourse. It is patently clear that free speech concerns must be fully addressed, and our overhaul of liability theory is not complete.⁴²² But our work is the first volley. To overcome fear will require understanding how risk perceptions are generated in our advanced communications-based world, who has the capability to shape (and does shape) the contours of our fears, what the social damage of fear is, and how our society should engage these broad social dilemmas so that our citizens can live less fearful lives. Let us proceed . . . without fear.

⁴¹⁹ STEPHEN BREYER, *BREAKING THE VICIOUS CIRCLE: TOWARD EFFECTIVE RISK REGULATION* 38 (1993).

⁴²⁰ *See id.* at 33, 55 (noting that that public “would like to have more risk reduction at current expenditure or similar risk reduction at less cost,” but that the interaction of “public perceptions, Congressional actions and reactions, and technical regulatory methods ” will make it difficult to achieve this goal.).

⁴²¹ Another promising method for fear reduction besides risk communicator liability is supported by the research of Kevin Ronan and David Johnston. The authors’ results suggest compelling schoolchildren to engage in hazard education programs “provide one gateway through which communities can increase their resilience to the effects of a major hazardous event.” Kevin R. Ronan & David M. Johnston, *Correlates of Hazard Education Programs for Youth*, 21 *RISK ANALYSIS* 1055, 1055 (2001).

⁴²² For instance, we still must identify how liability should be divided among multiple risk communicators. Where a scientist working for a private university speaks to an interviewing reporter working for a media corporation that broadcasts over a network’s telecommunication system, and the communication is excessively fear-mongering, who amongst these many parties should be liable for that message?

